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RELATIONSHIP BETWEEN LUPUS ERYTHEMATOSUS AND TUBERCULOSIS

A CRITICAL REVIEW BASED ON OBSERVATIONS AT NECROPSY

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The question of the tuberculous etiology of lupus erythematosus has created an extensive controversial literature. As a result of a clinicopathologic study of approximately 20 cases of lupus erythematosus which came to necropsy, I was impressed by the lack of evidence of active tuberculosis in the modern sense. Among European dermatologists there is still a difference of opinion. In general, the French, Austrian and Swiss observers have attributed the disease to tuberculosis, whereas the English have stressed the rôle of the streptococcus. The German school favors the conservative theory of multiple etiology advocated by Jadassohn. American dermatologists are divided in their opinions, as was demonstrated by a recent discussion.[1]

In studying the reported necropsies, I found that only 20 per cent of 125 postmortem examinations performed on patients with lupus erythematosus showed active or possibly active tuberculosis (bibliography), in contrast with the much higher frequency of association recorded by others (as high as 95 per cent). In order to make clear the criteria used in arriving at the figure given, it is proposed: (1) to describe the present concept of tuberculosis in some of its aspects, these data to be considered as constituting the criteria of active tuberculosis, and (2) to apply these data in the analysis of cases in the literature in which tuberculosis is presumed to have been the primary pathologic factor.

THE PRESENT CONCEPT OF TUBERCULOSIS

Since many of the postmortem examinations had been reported before the work of Albrecht, Ghon, Ranke and Puhl, the distinction between active and inactive tuberculosis was not recognized. Puhl (1922), in a series of 131 patients studied consecutively, who had died of various diseases (of which active tuberculosis constituted 26 per cent) found evidence of tuberculous infection in 97 per cent of the adults in the form of the primary complex (a subpleural focus of

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1. Discussion of Mook, W. H.; Weiss, R. S., and Bromberg, L. K.: Lupus Erythematosus Disseminatus, Arch. Dermat. & Syph. **24**:786 (Nov.) 1931.

infection with involvement of the corresponding lymph node). This figure, corroborated by other authorities, is probably not so high for postmortem observations in the United States. While the presence of the primary complex may at times be difficult to demonstrate, only 4 adults in Puhl's series had apparently escaped such infection. Furthermore, in 6 of his patients the primary infection in the lungs was still in the state of dry caseation and had not progressed to the characteristic stage of calcification and ossification. The corresponding lymph nodes were involved in 87.1 per cent of the cases, the discrepancy, according to Puhl, resulting from insufficient search. Usually the primary pulmonary infection was subpleural in location, but occasionally it was much deeper. From this evidence, it becomes clear that:

1. Tuberculous infection is almost universal, very few adults escaping it. Healed tuberculous foci are often incidentally found at necropsy in patients who died from other causes.

2. Tuberculous infection is not necessarily synonymous with active tuberculous disease.

It is not always a simple matter to judge the activity of a tuberculous process from macroscopic or microscopic appearances. Nevertheless, the histologic criteria described by Ranke (1928) afford a working basis, at least, whereby activity in lymph nodes may be judged. The importance of this work becomes apparent when one seeks to analyze the necropsy material from persons with lupus erythematosus in whose cases a diagnosis of active tuberculosis was made principally on the basis of evidence found in lymph nodes.

Generally, in the primary complex, the lymph nodes are not completely involved by the tuberculous process. Pathologically, areas of caseation of varying size, each surrounded by a zone of epithelioid cells, are characteristically found (proliferative tendency). Lymphocytes are relatively uncommon in these foci; giant cells are occasionally seen. A minimum of inflammatory reaction around these caseous areas (so-called perifocal inflammation) constitutes the striking feature. Certain major differences occur when the activity of the lymph nodes becomes disturbed during periods of stress, for instance, at puberty. At this time the picture changes greatly: The areas of caseation increase in number; the ring of epithelioid cells is no longer recognizable; the perifocal inflammation increases markedly, as is evidenced by collections of lymphocytes around engorged vessels; the signs of exudation of fluid are evident; periadenitis is present as an extension of the process and accounts for the matting of glands; the areas of caseation may encroach on the bronchus and erode its cartilage, causing intracanalicular bronchopneumonia, followed by death. The adventitia and media of adjacent vessels may become involved by the caseating process, while the intima may proliferate secondarily.

Lymphocytes are seen to invade foci of caseation. Nuclear fragmentation within these zones is a characteristic feature. Giant cells are noted only occasionally. In other words, the toxic component is far more important than the foreign body reaction. From the foregoing description one can easily understand how a lymph node may break into a bronchus and how the tuberculous process may spread through the blood channels and the lymphatics. Such a histologic picture may be taken to indicate activity in the secondary stage (scrofula of Aschoff). On the other hand, even after the spread has occurred, healing may take place, with corresponding histopathologic changes which need not be discussed. From a consideration of the pathologic changes one can see that caseation per se is not to be taken as the criterion of activity, except when it is of a certain type and is accompanied by other prominent changes.

As very few cases of active pulmonary tuberculosis associated with lupus erythematosus have been reported (except in the French literature), this aspect of the subject need not be discussed. It may, however, be stated that a primary subpleural infection does not imply tuberculous activity, since its presence can be established in over 90 per cent of all persons, that fibrous scars or old adhesions at the apexes of the lungs are far from indicating active disease and that apical râles do not necessarily mean tuberculosis. Pleurisy may occur apart from tuberculosis. Scars in the neck are only suggestive of previous scrofulous glands. A family history of contact is not necessarily diagnostic of tuberculosis. The theory of the tuberculous etiology of lupus erythematosus rests, in great part, on such indefinite criteria. It is today widely accepted that active tuberculosis of the lymph nodes is a disease characteristic of children and adolescents, whereas pulmonary tuberculosis is almost exclusively confined to adults. These are general rules (with occasional exceptions) which apply to races exposed to tuberculosis for centuries and should certainly be true of the urban population abroad. When, however, adults of previously unexposed races come in contact with the tubercle bacillus, they seem to contract a virulent form of infection which runs a course similar to that of the glandular tuberculosis of children. Observations made during the World War have amply proved this fact. In Mount Sinai Hospital, tuberculosis of the lymph nodes occurring in adults is almost entirely restricted to Negroes and Porto Ricans, whose progenitors have relatively recently acquired contact with the tubercle bacillus. Finally, areas of central softening and so-called caseation have been noted in the frequently enlarged lymph nodes in acute lupus erythematosus without, however, any accompanying histologic evidence of tuberculosis (Roberts [1911], Füllenbaum [1926], Volk [1928], Kren [1905], Gennerich [1922] and others). In several instances tubercle bacilli have been absent from such foci, as

well as from areas of softening in the viscera, so that any suspicion of acute tuberculous septicemia can be definitely eliminated. In some of these cases animal experiments were performed, with negative results.

POSTMORTEM EVIDENCE

Only necropsies in which tuberculosis is presumed to have played a direct etiologic rôle will be discussed. While this approach may have its limitations, its advantage over purely clinical diagnosis is obvious. As has been previously stated, most of the studies of necropsy material antedate the present accepted concept of tuberculosis. Much of the material has been incompletely studied. I have, in general, not included cases which were reported in the transactions of dermatologic societies, as the data given are usually too fragmentary for my purpose and may be, in some instances, more completely described elsewhere. A number of other cases have also been excluded for similar reasons. The summary will be based on 125 necropsies the classification of which may be found in the bibliography.

Before analyzing the cases, several points should be mentioned. First, nearly all the necropsies which have been excluded were those of patients free from tuberculosis. To dispense with these cases is not unjust to the theory of the tuberculous etiology. Second, the adherents of this theory always object to the results of the postmortem examinations on the ground that it is not possible to examine every square inch of lung or lymph node. To my mind, this objection is not valid, since most of the patients died within several weeks or months after the onset of lupus erythematosus. If tuberculosis were the cause, one would reasonably expect some evidence of it at necropsy. It is possible for a tuberculous infection to heal during such a chronic process as the discoid form of lupus erythematosus, but it is unreasonable to expect complete healing in the acute phase of lupus erythematosus, particularly if tuberculosis is the cause of the acute process. Occasionally the concept of typhobacillosis (Landouzy) is invoked in order to explain the absence of obvious tuberculosis, a subject which will be discussed subsequently. Third, the possibility that an acute process like the d'emblée type may cause a flare-up of old tuberculosis is mentioned for consideration. At times one may find at necropsy an acute terminal spread of tuberculosis, even with dissemination, in patients who die from other demonstrable causes. Why this should happen is not definitely known, but it is conceivable that lowered resistance may be a factor and that the spread may be analogous to the occasional antemortem spread of other bacteria. Fourth, the acute d'emblée type is classified in this paper as a variety of lupus erythematosus, although there are some who would consider it a disease *sui generis*. The subacute type is included in the general

group of acute lupus erythematosus; I believe that the only difference between these two lies in the duration of the clinical course. Finally, it is necessary occasionally to use one's own judgment in the classification of certain cases, the data presented being insufficient to permit their absolute disposal in one category or another.

In about 50 cases of lupus erythematosus which came to necropsy, tuberculosis was found. In my opinion, most of these were cases of lupus erythematosus with incidental inactive tuberculosis in the modern sense. In order to avoid repetition, only the more important cases will be discussed as types. The difficulties encountered in the interpretation of reports of postmortem examinations in which the data are not as complete as one might desire are obvious. Nevertheless, a sufficient number of autopsies have been reported to permit the drawing of definite conclusions.

Cases in Which Active Tuberculosis Was Claimed to Be Present.—In the first case reported by Kraus and Bohač (1908), the patient was jaundiced, and bilateral pneumonia was found post mortem. In addition, a diagnosis of chronic tuberculosis of the cervical, axillary and inguinal glands was made without any microscopic studies. Acute lupus erythematosus of five months' duration cannot be accurately linked with "chronic tuberculosis." A similar opinion may be held for the seventh case reported by these authors. Their sixth case is labeled morbus addisonii because of the presence of chronic inflammatory changes in the suprarenal glands. Kraus and Bohač considered tuberculosis to be inactive as a pathologic factor. They concluded that the lupus erythematosus was caused by the pneumonic process and believed that Bacillus influenzae (found in 3 of their patients) or its toxin was the etiologic factor.

Mebert's case (1908) illustrates the type of postmortem observations on which exponents of the tuberculous theory would base a diagnosis of bona fide active tuberculosis. The patient, a girl, aged 17, died several months after the onset of subacute lupus erythematosus. At postmortem examination, pneumonia of the left lower lobe, pulmonary edema, pleurisy and swollen tracheobronchial, retroperitoneal and mesenteric lymph nodes were found. In addition, "old tuberculosis of the peritracheal glands" was noted. Mebert assumed that the acute swelling of the lymph nodes was caused by tuberculosis, but microscopic examination was not made. As has been previously mentioned, one of the characteristic findings in acute lupus erythematosus is the presence of enlarged lymph glands which may show areas of softening grossly and a nonspecific irritative inflammation microscopically. Animal experiments in this case gave negative results.

The report of Reitmann and von Zumbusch (1910) illustrates other aspects of the problem. In their first case, they found bilateral old tuberculosis at the apexes of the lungs and old scarred ulcers in the cecum and ascending colon. In their second case a calcified tuberculous lesion at the left apex is mentioned in addition to widespread bronchopneumonia and subacute parenchymatous nephritis. Chronic pulmonary tuberculosis is mentioned in their fourth case. The observations in these cases may be regarded as indicative of coincidental and inactive tuberculosis. The observations in their third case are more difficult to evaluate, as an old tuberculosis of the bronchial nodes, caseous glands in the submaxillary region and tuberculosis of the spleen were found, in addition to chronic parenchymatous nephritis. The clinical cause of death was uremia. No details of the

microscopic examination are given. The authors stated that, in their cases, tuberculosis was never severe enough to affect the course. In their sixth case, the pathologic factor of tuberculosis was completely lacking. In a later publication, von Zumbusch reported 3 additional cases, with 1 postmortem examination in which he denied that tuberculosis was the etiologic factor.

The case reported by Roberts (1911) brings up several interesting points. It concerns a woman, aged 20, with a remarkable history of tuberculosis in six or seven members of the family. Her entire illness lasted eight months. At postmortem examination the mesenteric lymph nodes were described as revealing "old caseous tuberculosis," while some of the smaller nodes showed signs of recent tuberculosis. Yet, surprisingly, microscopic examination gave negative results for tuberculosis, including the recent formation of tubercles. This strikingly illustrates the necessity of microscopy to corroborate diagnoses based on gross examination and demonstrates the difficulty of evaluating the evidence in cases in which the diagnosis is made only on the gross appearance without realizing that foci of softening with no relationship to tuberculosis may occur in various organs.

In the report of Low, Logan and Rutherford (1920), laryngeal diphtheria was cited as the cause of death. In the protocol of the postmortem examination, mention was made of acute bronchitis, bronchopneumonia, tuberculosis of the mediastinal lymph nodes, a fibroid nodule in the right lung and tuberculosis of the mesenteric glands with ulcerative changes in the ileum and cecum. When the details are studied more carefully, however, one finds that only old inactive tuberculosis has been described. The authors stated their opinion concisely: "This case undoubtedly suffered from fairly extensive chronic tuberculous lesions, but not any more extensive than are frequently seen in patients dying of other infections."

Klingmüller's (1921) first case is of great interest. The protocol of the postmortem examination described chronic indurative tuberculosis of both lungs and tuberculous ulcers of the small and large intestines, associated with miliary dissemination in the internal organs. The author commented on the apparent paradox that as the tuberculosis became widespread, the discoid lesions healed. For this reason he hesitated to accept tuberculosis as the etiologic factor, realizing, of course, that in severe forms of the disease there may be a change in the ability of the skin to react, for instance, to tuberculin. In this case, at least, evidence of active tuberculosis seems fairly clear, although one would hesitate to accept the relationship as that of cause and effect. It is within the realm of possibility that the chronic discoid lupus erythematosus of seven years' duration could have started at a time when the tuberculous foci were inactive and that the actual active dissemination took place later as an independent event. As this point is speculative, I shall include this case in the category of associated active tuberculosis. In Klingmüller's second case, one of acute lupus erythematosus, there was no evidence of tuberculosis, either recent or old.

Gennerich stated, in 1922, that, in addition to pneumonia and pleurisy, caseous and calcifying cervical, bronchial and mesenteric lymph glands were found in his case. Again microscopic studies failed to reveal either tuberculous structure or tubercle bacilli. To this central softening, on which Gennerich based his theory that lupus erythematosus is caused by the liberation of lymphocytic ferments, he would also attribute the 4 plus Wassermann reaction obtained in his case. This theory has never been confirmed.

Ehrmann and Falkenstein, the well known exponents of the theory of the tuberculous etiology of lupus erythematosus, reported (1922) a number of cases to support their view, but only 2 necropsies were recorded. In their first case

of acute lupus erythematosus, the protocol of the postmortem examination described, in addition to bilateral pneumonia, a hilar node with a calcified focus and another hilar node with "caseous progressive" tuberculosis. The report of the histologic examination of the hilar nodes gives one no clear ground for regarding the observations as indicative of "progressive" tuberculosis. Biopsy of tissue taken from an epitrochlear gland revealed desquamative catarrh, which may be considered nonspecific, since it is found in other conditions. The lungs were entirely free from evidence of tuberculosis. The second case reported by Ehrmann and Falkenstein showed many caseous glands at necropsy and is classed in the category of associated active tuberculosis in view of the presence of amyloidosis of the viscera. That the Viennese school should have been impressed by the association of lupus erythematosus with tuberculosis is not surprising when one remembers that the clinically severe forms of tuberculosis, including miliary dissemination (morbus viennensis), are seen more frequently in Vienna than elsewhere. This is the probable explanation, I believe, for the greater number of reports of associated tuberculosis by members of this school.

Keefer and Felty, in 1924, reported the observations at necropsy in 2 Negresses who suffered from acute lupus erythematosus. Analysis of the first case reveals data which seem to be unclear. The patient, aged 36, had had an axillary node removed during life which histologically presented a nonspecific chronic inflammation. A suspension of tissue from this node, on injection into a rabbit's testicle, produced caseous tuberculosis within two weeks, with acid-fast bacilli which were demonstrable by staining. Later, at postmortem examination, a suspension of tissue from another axillary node was injected into several guinea-pigs, and a "strain of tubercle bacilli was isolated. The strain was shown to be of the human type by its failure to infect rabbits." Hence there apparently existed in this patient two types of tubercle bacilli. The generalized lymphadenopathy found at necropsy was negative for tuberculosis on gross examination, except for a tiny focus in one axillary node. Microscopically, the glands were found to be negative throughout, except for the one described, which proved to have a cluster of tubercles, partly fibrous and partly caseous. In the second case reported by Keefer and Felty, there was a clinical picture of bronchopneumonia and renal involvement post mortem (the figure for the blood urea was not given). Grossly, the retroperitoneal, pelvic and inguinal glands were enlarged, and on section most of the glands showed scattered tubercles and large areas of caseation surrounded by hemorrhagic adenoid tissue. Microscopically, the retroperitoneal lymph nodes revealed marked tuberculosis, with large areas of caseation and many giant cells. In their clinical analysis, the authors stated that "a few small lymph nodes contained tubercles, but, in no instance, were there extensive tuberculous lesions." Further, they quoted a number of observers who had found tubercle bacilli in lymphadenoid tissue without any evidence of tuberculosis histologically, and they suggested that this latency may in some way be linked with the presence of the disseminated lupus erythematosus. These 2 cases will be considered as showing active tuberculosis.

Schaumann's 3 cases (1926) may be briefly dismissed. In the first the author was probably describing a primary complex. In the second, he noted a caseous focus near the surface in one lung, with a corresponding calcified hilar node, again an excellent description of a primary complex. Finally, in his third case the account is too vague to give reasonable evidence of active tuberculosis. His theory that lupus erythematosus is a lymphogranuloma similar to Hodgkin's disease but of tuberculous origin has never been confirmed

The case of Bloch and Ramel (1924) is frequently cited. It concerns a woman, aged 38, whose mother and brother had died of tuberculosis and who, twelve years before admission to the hospital, had an attack of pleurisy. She had been in fairly good health since then. Acute lupus erythematosus d'emblée finally developed, from which the patient died shortly after the onset. A diagnosis of tuberculosis had been confidently made on the evidence of râles in the lungs and a roentgenogram which showed fibrous tuberculosis at the apexes associated with calcified foci in the hilar regions. To the great surprise of the observers, the necropsy failed to reveal any signs of active tuberculosis. Only lobular hemorrhagic pneumonia and pleurisy were found in addition to fibrous and calcified foci in both apexes of the lungs, calcification of the right cervical lymph node and large kidneys. These observations did not support the diagnosis of active tuberculosis, according to the pathologist. Nevertheless, twelve guinea-pigs were inoculated with suspensions of subcutaneous tissue; eight of these died from purulent processes which were nontuberculous in origin. The other guinea-pigs remained healthy. This case is recorded because of the results of the inoculation of 10 cc. of blood into each of two guinea-pigs about three weeks before the death of the patient. A careful perusal of the report of the histologic examination of the lymph nodes and viscera of these guinea-pigs reveals data which, in my opinion, are inconclusive for the diagnosis of tuberculosis. Bloch and Ramel suggested the time-honored concept of a biologically modified tubercle bacillus as the etiologic factor in this case. They believed that the organism was derived from the apical foci. The description, however, reads like that of old inactive tuberculosis. In short, tubercle bacilli were not conclusively demonstrated intravitally in this patient. At autopsy no evidence of active tuberculosis was present, according to the pathologist.

In the case reported by Schmidt-La Baume (1929), in which I had the opportunity to see the protocol of the postmortem examination and the microscopic sections, necropsy showed a small encapsulated fibrosed focus in the upper lobe of the right lung and calcified cecal glands. The latter, on microscopic study, revealed isolated old fibrous tubercles. The mildness of the tuberculosis could not explain the rapid course and the marked anemia (46 per cent hemoglobin), and consequently it was assumed that toxemic products originating in the skin were responsible. This explanation is untenable, but the case is quoted to demonstrate the interpretation of such findings.

Mook, Weiss and Bromberg, in 1931, reported 2 cases in which the question of tuberculosis comes into consideration. In the first case, calcified tuberculous foci were found in the lungs and tracheobronchial glands, and the hilar lymph nodes contained old calcified and caseous tuberculous lesions. Inoculation of animals with cutaneous tissue gave negative results, but inoculation with tissue from the lungs and lymph nodes caused tuberculosis in guinea-pigs. Is this to be considered evidence in favor of active tuberculosis? I agree with the following statement made by the authors: "We succeeded in cultivating a human strain of tubercle bacillus from the pulmonary tissue and mediastinal lymph nodes in one case. The tissues were calcified foci of latent tuberculosis. This had previously been done by others, and we do not attach any etiologic significance to the fact. We believe it could be done in a very large percentage of general necropsy material." In their fourth case, they described a few small completely healed tubercles in the lung and spleen, which they regarded as inactive.

Gougerot, Blum and Cohen, in 1932, reported a case of the superficial type of lupus erythematosus in a woman, aged 35, who was observed for one and a half years. This case is important not only from the clinical standpoint but also

because of the conclusions drawn from the necropsy data. The original diagnosis was that of a reticulated form of generalized mercurial erythrodermia resembling markedly the clinical picture of poikiloderma atrophicans vasculare (Jacobi). The subsequent course was marked by the presence of angiokeratoma-like lesions on the extremities, an eruption resembling papulonecrotic tuberculids, a strongly positive intradermal reaction to tuberculin (1:1,000) and the frank cutaneous signs and symptoms of disseminated lupus erythematosus of the superficial variety. Two months before death the patient began to show the usual signs of renal insufficiency. Pleural fluid and peripheral blood were inoculated into guinea-pigs, with negative results for tuberculosis. The patient finally died in uremia. A careful study of the protocol of the postmortem examination reveals the absence of not only active but also inactive tuberculosis, inclusive of the lymph nodes. The authors concluded: "This terminal evolution of lupus erythematosus is known. It appears to correspond to a terminal bacillemia, with or without visceral localization, without granuloma or tubercles visible microscopically or macroscopically and consequently comparable to the typhobacillosis of Landouzy."

About fifty years ago, Landouzy propounded his concept of typhobacillosis, implying by this term a form of tuberculosis the course of which was similar to that of typhoid fever and in which necropsy revealed only a few discrete scattered "tuberculous granulations." In other words, the relation of the symptoms to the pathologic findings was paradoxical. The concept was later broadened to include subacute cases as well as instances of recovery. When it is remembered that Landouzy had described many of his cases before the discovery of the tubercle bacillus, before blood cultures were taken in a routine manner to exclude other forms of bacterial sepsis the clinical course of which might be similar and before the use of x-rays and modern diagnostic methods, and further, when it is realized that his necropsy material was incompletely studied, and that the present concept of tuberculosis is only fifteen years old, the necessity for the critical evaluation of Landouzy's statements becomes apparent. Further doubt exists in my mind because of a case of subacute typhobacillosis reported almost thirty years later (1908) by Landouzy and Laederich. This was probably a case of acute rheumatic fever, despite the finding of two tubercle bacilli in a small healed lesion in the apex of the left lung and in the fibrous wall of a subcutaneous nodule. This opinion is supported by the clinical history and the course in this case, by the presence of typical rheumatic circinate eruptions and of rheumatic subcutaneous nodules in the usual locations (elbows, knees and scalp) and by the observations at necropsy of typical rheumatic endocarditis and an adherent pericardium. Landouzy and Laederich regarded the endocarditis as tuberculous in origin, but I cannot agree with this view nor with their opinion regarding the atypical results which they obtained in the inoculation of guinea-pigs.

The contribution of Landouzy would appear to be based on a shrewd surmise rather than on proof in the cases which he reported. There

are rare instances in which a tuberculous dissemination (acute tuberculous septicemia) may reveal at necropsy only tiny necrotic foci which do not show the pathologic features of a true tubercle microscopically but which contain tubercle bacilli in profusion. In some of these cases the course is comparable to that in typhoid fever, and in such cases one may truly speak of typhobacillosis in the original sense of Landouzy. In some cases the condition appears to be an accidental terminal dissemination, but this point is still *sub judice*. Cases of this type have been separated from the typhoidal form of ordinary acute miliary tuberculosis by some authors by virtue of the nonspecificity of the tissue reaction, although Scholz, in 1918, explained this difference merely on the basis of rapidity of course. That a tuberculous sepsis may, however, be so fulminating as to show no evidence of its presence either macroscopically or microscopically seems doubtful and is rendered more so by the inability to demonstrate tubercle bacilli in smears and in sections. The rare cases of acute tuberculous sepsis seem to be characterized by the ease with which tubercle bacilli can be found, although many of them lack the confirmation of animal experiment. The case reported by Gougerot and his associates lacks even the minimum of evidence necessary to label a case as typhobacillosis in any sense, old or modern.

Recently I saw an unusual case of lupus erythematosus [2] in an Italian girl, aged 16, who was followed for four months until death occurred. The general symptoms and cutaneous signs appeared two years previous to her admission to the hospital. Because of physical signs in the right lung, a roentgenogram was taken; this was reported to show an infiltration in the mesial portion of the upper lobe of the right lung, which was probably due to a chronic inflammatory process. Both the Pirquet and Mantoux (1:1,000) tests gave negative results. A Löwenstein culture of the blood was sterile. The spleen was palpated 3 cm. below the left costal margin on deep inspiration and was moderately firm. Three weeks later, a roentgenogram showed a slight absorption of the infiltration. The fever curve was remittent during the first three weeks and then remained normal for the remaining eight weeks except for an occasional rise to 101 F. Gold sodium thiosulphate caused a focal flare-up of the facial lesion, following which the eruption seemed to subside. The patient's condition was greatly improved at the time when she was discharged. Two weeks later, she returned to the hospital. The course was now characterized by high continuous fever, signs of pneumonia in the lower lobe of the left lung and pericardial effusion. Unfortunately, the necropsy was incomplete. However, unquestionable evidence of miliary tuberculosis of the spleen, liver and kidneys was found. A small piece of lung also showed miliary tuberculosis. Microscopy of the available organs revealed recent miliary tubercles; hence the dissemination was probably fresh. A mass which was palpated in the upper lobe of the left lung at necropsy corresponded to the roentgen findings at the time of the patient's last admission, but was not present in the first roentgenograms taken, and consequently was probably recent in origin. The symptoms were of approximately two and a half years' duration. Whether active tuberculosis

2. Unpublished case from Mount Sinai Hospital.

had been present during this time is uncertain. The only conclusion (and a very unsatisfactory one) that can be drawn from this incomplete autopsy is that the patient died as a result of recent miliary tuberculosis. It is possible that the dissemination was secondary in type, similar to the occasional miliary tuberculosis which occurs after measles. This case is included under the category of lupus erythematosus with associated active tuberculosis and is the only instance in approximately 20 postmortem examinations studied by me in which active tuberculosis could be demonstrated.

SUMMARY AND CONCLUSIONS

In the bibliography a list of cases of lupus erythematosus will be found in which active or possibly active tuberculosis has been noted. These number 25, constituting 20 per cent of the 125 collected cases of lupus erythematosus in which necropsy was obtained. Almost 75 per cent of these 25 cases are reported from European countries; only 6, or 25 per cent, are reported from the United States. The preponderance of cases of positive tuberculosis reported from Europe is accounted for by the more common occurrence of the disease there (in latent as well as active forms). Twenty-six additional cases are listed in which inactive tuberculosis was probably present. Seventy-four additional cases are listed in which tuberculosis can, from the pathologic point of view, be excluded.

Mention has been made of the rarity of active pulmonary tuberculosis. In more than 50 per cent of the necropsies, tuberculosis in any form was apparently not found. A more thorough search for the primary complex would undoubtedly have decreased this figure. On the other hand, active or possibly active tuberculosis was found in only 20 per cent of the total number of necropsies. This result is in striking contrast to the much higher figures recorded by authors who have used the older, obsolete criteria.

The cases of associated active pulmonary tuberculosis are practically confined to the French reports (Hallopeau and Jeanselme [1891], Audry [1894], Gougerot [1929] and Balzer and Rafinesque [1910]), whose material was derived from the lower strata of society in which the incidence of active tuberculosis must be relatively high even today. Similarly, the only instances of active pulmonary tuberculosis in association with poikiloderma atrophicans vasculare are to be found in the French reports (Petges, 2 cases). That instances of lupus erythematosus without active tuberculosis existed even in France, however, is evidenced by the words of Brocq (1924): "Observers have said (and I must confess that I am one of them) that, in certain cases of lupus erythematosus which have succumbed accidentally in the hospital, one has been able to find post mortem not only no lesion of tuberculosis but not even any cicatrix of healed tuberculous lesions."

The statement that patients with lupus erythematosus eventually succumb to pulmonary tuberculosis is at variance with the postmortem

observations in cases collected from all over the world, and is particularly untrue for the acute variety. In several instances the presence of a primary complex has been erroneously offered as evidence of active pulmonary tuberculosis.

The necessity of microscopic examination to verify the gross diagnosis has been stressed, and a number of cases have been cited in which the gross impression of tuberculosis was not verified by microscopy. Furthermore, a number of cases in which microscopic examination was not made have been included in the group of 25 showing active tuberculosis. In some of the cases the reactions to tuberculin tests made at a time when the patient was not so seriously ill were negative. In many of the cases there were other associated pathologic causes of death, as, for example, bronchopneumonia, renal insufficiency, cirrhosis of the liver and meningitis. What has again been proved is the "ubiquity of tuberculosis." As a rough comparison, I have drawn on the postmortem material of impetigo herpetiformis, of which there are 26 cases. In approximately 20 per cent one will find associated active or possibly active tuberculosis, despite the fact that recent evidence seems to point to a probable relationship to parathyroid disease.

On the basis of the necropsies which I studied, as well as of those reported in the literature, I must conclude that the occurrence of tuberculosis in cases of lupus erythematosus is coincidental and unrelated. There is no justification, in my opinion, for the assumption that active tuberculosis is present merely because the patient has lupus erythematosus. I have seen at least 3 cases which came to autopsy in which this unwarranted diagnosis was made. It is to be emphasized that neither disease excludes the other, and that therefore their occasional coincidence is not surprising. With the recognition and application of more rigorous scientific criteria, the rôle of tuberculosis as a cause of lupus erythematosus will become minimized, as is indicated in the recent, more carefully studied postmortem examinations.

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Ehrmann, S., and Falkenstein, F.: Arch. f. Dermat. u. Syph. **141**:408, 1922 (case 8).
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NITRITOID CRISIS DUE TO BISMUTH

REPORT OF A CASE

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The systemic complications and reactions incident to the use of bismuth preparations in the treatment of syphilis are relatively few but varied. They range from gingivitis to death.[1] A nitritoid crisis due to bismuth is doubtless a rare accident. This striking vascular phenomenon, named nitritoid crisis because of its similarity to the reaction to amyl nitrite, has heretofore been considered a manifestation of intolerance in the human organism peculiar to the arsphenamines. That such is not the case, however, has lately been shown by reports from abroad [2] of its occurrence following the intramuscular administration of bismuth preparations. I have been able to find no such report of American authorship, and therefore feel justified in submitting this record of a personally observed case.

REPORT OF CASE

L. B., a white girl, aged 18, suffering from congenital syphilis, was brought to me for a resumption of antisyphilitic treatment which she had received spasmodically over a period of years. In spite of a history of previous reaction to asphenamine (which answered the description of a nitritoid crisis), a course of neoarsphenamine was tentatively begun. Immediately following the initial injection of 0.3 Gm. of this drug a typical acute nitritoid crisis developed which was readily controlled by epinephrine. It was then decided to continue therapy with a bismuth preparation alone. Eight weekly doses of a standard preparation of oil-soluble bismuth, given intramuscularly, were borne with impunity, but a few minutes after the ninth injection the patient complained of feeling faint and was made to lie down. Very quickly intense phenomena of congestion appeared, which were identical with the postarsphenamine crisis already mentioned. The face and ears became suffused with a scarlet flush, which extended downward to involve the neck. Tears filled the eyes and overflowed to the cheeks. A tightening of the throat made swallowing difficult. The pulse rate rose. The breath began to come in short, staccato pants, and in a few minutes the patient was almost overwhelmed by a sense of suffocation and impending death. There was no pain, no cough and no expectoration. Ten minims (0.6 Gm.) of a 1:1,000 solution of epinephrine was given subcutaneously at the beginning of the attack, and the worst was over in fifteen minutes. At the end of an hour all the symptoms had completely subsided, though the patient was left nervous and badly shaken.

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1. Beerman, H.: Fatalities Due to Bismuth in the Treatment of Syphilis, Arch. Dermat. & Syph. **26**:797 (Nov.) 1932.

2. Nicolas, J., and Lebeuf, F.: Deux cas de crise nitritoide d'origine bismuthique, Bull. Soc. franç. de dermat. et syph. **39**:82 (Jan.) 1932.

COMMENT

That the reaction was due to a technical error or to a fault in the drug can, I think, be safely excluded. There remains, then, but one explanation, namely, idiosyncrasy in the patient. The nitritoid crisis, well known as a complication of arsphenamine treatment, has been ascribed to a variety of causes. That there is an element of specific hypersensitiveness comparable to that observed to specific proteins is the conviction of many. The whole problem of idiosyncrasy to the arsphenamines and to the heavy metals, depending, as it does, on distinctive differences in the protein composition and colloidal equilibrium of the blood and tissues of different persons, is still complex and poorly understood. The fact that the clinical expression of an idiosyncrasy to bismuth in this patient should take exactly the same form as a previously manifested hypersensitivity to the arsphenamines is indeed arresting, and, together with like observations in the future, may call for a revision of the current concepts regarding the nature of the nitritoid crisis.

401 Medical Arts Building.

HERPES GESTATIONIS

REPORT OF A CASE

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Among the less common diseases of the skin, there has long been recognized a malady characterized by bullous lesions and produced by, or occurring incident to, the gravid state. The first report of a condition of this kind is, according to Riecke,[1] rightly ascribed to Bunel's dissertation in 1811. Subsequent to 1840, when Gibert [2] described a case of pemphigus, which recurred with succeeding pregnancies, there have appeared many publications describing the same syndrome, but suggesting a number of different terms for its identification. The pemphigus pruriginosus of Chausit [3] and of Hardy,[4] as well as the herpes circinatus bullosus of Wilson,[5] gave precedence to the later appellation, "herpes gestationis," suggested by Milton.[6] The latter term is the one generally accepted today, though the designations "dermatitis multiformis gestationis" of Allen [7] and "dermatite polymorphe douloureuse récidivante de la grossesse" of Brocq [8] are perhaps even more descriptive.

Priority in the recognition of herpes gestationis as a variety of dermatitis herpetiformis has been a subject of considerable controversy. T. Colcott Fox, in discussing Jamieson's paper, gave credit to the work of Tilbury Fox as the first communication to establish correlation

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1. Riecke, E., in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1931, vol. 7, pt. 2, p. 637.

2. Gibert: Traité pratique des maladies de la peau, Paris, 1840, p. 102; quoted by Bulkley.[9]

3. Chausit: Ann. d. mal. de la peau, March, 1852, p. 142; quoted by Bulkley.[9]

4. Hardy, A.: Leçon sur les maladies de la peau, ed. 2, Paris, A. Delahage, 1863, part 2, p. 136; quoted by Bulkley.[9]

5. Wilson, W. J. E.: On Diseases of the Skin, London, J. Churchill & Sons, 1867, p. 294; quoted by Bulkley.[9]

6. Milton, J. L.: The Pathology and Treatment of Diseases of the Skin, London, R. Hardwicke, 1872, p. 205; quoted by Bulkley.[9]

7. Allen, C. W.: J. Cutan. & Genito-Urin. Dis., Aug., 1889, p. 291.

8. Besnier, E.; Brocq, L., and Jacquet, L.: La pratique dermatologie, Paris, Masson et Cie, 1900, vol. 1, p. 688.

between the two terms. Bulkley,[9] Duhring,[10] Brocq,[11] Jamieson[12] and many others have subsequently concurred in the opinion that the two diseases are identical.

TIME OF INITIAL APPEARANCE

In view of the fact that herpes gestationis differs from dermatitis herpetiformis only in its special inciting cause, one may rightly expect in this syndrome a considerable degree of variability as to the time of onset, signs, symptoms and response to therapy.

The disease may appear when the patient becomes enceinte for the first time.[13] It may be delayed until the third, fifth, seventh or even to the last of a long series of pregnancies.[14] At times, attacks occur with monotonous regularity in each of many successive gestations,[15] as for example, in Barendt's case (discussion of Jamieson's paper), or return intermittently with every second or third pregnancy.[13a]

Although cutaneous manifestations are occasionally the first signs of the gravid state, as a rule the onset dates from about the fourth or fifth month, progressing to term with the usual cyclic flare-ups and remissions. During the first few days post partum a final acute exacerbation is usual, followed by a permanent regression of all signs within from three to thirty days. Curiously enough, numerous cases of the disease have been reported in which the first symptoms appeared in the puerperium.[16] Indeed, MacKee, in discussing Whitehouse's presentation, stated that in his experience the malady had appeared only after the termination of pregnancy.

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9. Bulkley, L. D.: Am. J. Obst. **6**:580 (Feb.) 1874.

10. Duhring, L. A.: M. News **47**:421 (Oct. 17) 1885.

11. Brocq, L.: Monatschr. f. prakt. Dermat. **7**:625, 687 and 841, 1888; **8**:172, 224, 263, 410 and 463, 1889; quoted by Riecke.[1]

12. Jamieson, W. A.: Brit. J. Dermat. **10**:73 and 118 (March) 1898.

13. (*a*) Milton, J. L.: J. Cutan. Med. & Dis. Skin **1**:311, 1867-1868. (*b*) Pringle, quoted by Little.[16a] (*c*) Isbister, J. L. T.: M. J. Australia **2**:648 (Nov. 5) 1927. (*d*) Ward, E.: Lancet **1**:1827 (June 26) 1909.

14. (*a*) Little, E. G. G.: Brit. J. Dermat. **13**:419, 1901. (*b*) Tommasi, L.: Gior. ital d. mal. ven. **63**:669 (May) 1922. (*c*) Brittmann, O.: Ceská dermat. **4**:33, 1922; abstr., Arch. Dermat. & Syph. **7**:524 (April) 1923. (*d*) Morris, M., and Whitfield, A.: Brit. J. Dermat. **9**:213, 1897. (*e*) Mackenzie, S.: Brit. J. Dermat. **5**:1, 1893.

15. Pringle.[13b] Ward.[13d]

16. (*a*) Little, E. G. G.: Brit. J. Dermat. **29**:125, 1917. (*b*) Lesser, E.: Monatschr. f. prakt. Dermat. **28**:198, 1899. (*c*) Whitehouse, H. H.: Herpes Gestationis, Arch. Dermat. & Syph. **16**:355 (Sept.) 1927. (*d*) Morris, M.: Brit. J. Dermat. **13**:167, 1901. (*e*) Oliver, E. A., and Finnerud, C. W.: Dermatitis Herpetiformis (Herpes Gestationis), Arch. Dermat. & Syph. **15**:79 (Jan.) 1927. (*f*) Little.[14a]

SIGNS AND SYMPTOMS

The signs and symptoms of herpes gestationis have been so thoroughly described [17] that it is necessary to give only a brief review of the essential features. A typical attack is ushered in with a generalized pruritus of greater or less severity. Then there appears a patchy erythema, starting, as a rule, on the extremities and sometimes on the trunk. Within a day or two the erythematous areas enlarge, while small vesicles appear in herpetiform crops, arcs or rings. In one place or another the vesicles are to be found entirely surrounding a red macule or slightly raised and edematous plaque, either at its junction with the normal skin or alined on a palpably elevated margin. Soon vesicles coalesce to form tense, thick-walled bullae of assorted sizes. At this time some of the bullae may be discovered arising from apparently unaltered skin. Later a few of the bullae become pustular or hemorrhagic. Following rupture, the serous crusts eventually fall away leaving, as a rule, only a distinct pigmentation. Mucosal lesions are decidedly rare.

As the pregnancy progresses, periodic exacerbations are the rule, accompanied by mild to severe constitutional symptoms, such as: fever,[18] dyspepsia,[8] constipation, albuminuria [13c] and neuralgic pains.[19]

PROGNOSIS

The prognosis for the mother is good. Sometimes there are sequelae consisting of periodic bullous efflorescences,[20] usually diagnosed as herpes menstrualis recidivans. A few cases with serious or fatal outcome have been reported.[21] In one instance in particular a long series of successive pregnancies led to attacks of greater and greater severity, until the patient finally succumbed with ulcerative lesions of the mouth, esophagus and colon, thus simulating a pemphigus. On the other hand, Ward's case was one in which a gestation had occurred yearly for eight years with no serious consequences.

The outlook for the child is much less hopeful than that for the mother. Numerous authors have reported the children to be quite nor-

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17. Radcliffe-Crocker, H.: Diseases of the Skin, ed. 3, Philadelphia, P. Blakiston's Son & Co., 1910, p. 622. Darrier, J.: A Textbook of Dermatology, Philadelphia, Lea & Febiger, 1920, p. 184. Bulkley.[9] Duhring.[10]

18. Bulkley.[9] Milton.[13a]

19. Bulkley.[9] Mackenzie.[14e]

20. (*a*) Bryan, C. A. D.: Lancet **1**:512 (Feb. 24) 1906. (*b*) Tommasi, L.: Gior. ital d. mal. ven. **65**:840 (June) 1924; abstr., Arch. Dermat. & Syph. **10**: 765 (Dec.) 1924.

21. Heckert, E.: Zentralbl. f. Haut- u. Geschlechtskr. **31**:57, 1929. Riecke.[1] Pringle.[13b]

mal, but an equal number have presented cases of miscarriage, stillbirth with macerated fetus and apparently normal babies who died suddenly during the first year of life, apparently of some obscure intercurrent infection.[22] Cutaneous lesions may occur in the child, though this has apparently little to do with the prognosis. Tommasi reported two cases in which lesions of the skin developed on the infant after birth, but disappeared within a few days, leaving no evidence of their former presence. Milton's case, presenting an alternation of stillbirths and live babies, demonstrated cutaneous lesions in both the healthy and the dead children. Further, one from the group of dead children showed no evidence whatever of any abnormality of the skin. It is unfortunate that the data available preclude an estimation of the incidence of syphilis in this series.

ETIOLOGY

The etiologic factors involved are, at present, not definitely known. The consensus appears to be that the cutaneous lesions result from injury to the vasomotor nerves by toxins or ferments, manufactured by fetal tissues or by the cells of the chorionic epithelium.[14c] These substances may ordinarily be neutralized by antiferments [23] or, as seems more plausible, are formed in quantity only when the chorionic villi disintegrate. It is well known that the placentas, even from women with no demonstrable organic disease, frequently show areas of infarction. Dissolution of the tissue at the time of such accidents may well be responsible for the periodic exacerbations already noted. Further, the characteristic efflorescence of the puerperium as well as the long-continued symptoms post partum in certain cases could be produced by retained placental fragments.

In harmony with the foregoing view is the theory of renal insufficiency advanced by some writers. Perrin [24] found urea, total nitrogen and chloride retention. Presumably there would be an accompanying failure to eliminate toxins or similar bodies of high molecular weight.

A few investigators have considered an internal secretory deficiency to be a factor of prime importance.[25] Tommasi [14b] expressed the belief that the malady may originate from ovarian hypofunction, though he suggested that anaphylaxis may also play an important rôle.[20b]

22. (a) Meisel, A.: Russk. vestn. dermat. **5**:615, 1927; abstr., Zentralbl. f. Haut- u. Geschlechtskr. **27**:384, 1928. (*b*) Levigne, Sylvie: Thèse de Paris, 1911; quoted by Riecke.[1] (*c*) Milton.[13a] (*d*) Isbister. [13c] (*e*) Bryan.[20a]

23. Weckselmann: Arch. f. Dermat. u. Syph. **102**:207, 1910.

24. Perrin, C.: Ann. de dermat. et syph. **5**:1370, 1894; quoted by Riecke.[1]

25. Perondi, G.: Clin. ostet. **27**:225, 1925; quoted by Riecke.[1]

HISTOPATHOLOGY

The picture varies with the stage of evolution of the particular lesion, but in no way can it be differentiated from that of dermatitis herpetiformis.[26] Changes observed include epidermal hyperplasia and parakeratosis, intra-epidermal vesicles containing eosinophils,[24] edema of the prickle cell layer,[27] dilatation of the capillary vessels [28] and marked lymphocytic infiltration of papillary and subpapillary layers. The eosinophils form perivascular collars about the deeper vessels and frequently appear not to have come from the capillaries at all.[26]

DIAGNOSIS

There occasionally arises the necessity of differentiating herpes gestationis from pemphigus or erythema multiforme. In pemphigus, mucosal lesions are the rule. The cutaneous bullae are thin-walled and arise largely from an apparently unaltered surface. The patient is greatly prostrated, and response to therapy is slow. In herpes gestationis, involvement of the mucous membrane is exceedingly rare. Bullous lesions of the skin are tense and thick-walled and originate, for the most part, at the margins of erythematous plaques. Pruritus and distressing paresthesias are prominent symptoms, but indications of a generalized infection are usually absent. Response to intensive arsenical therapy is comparatively rapid. The bullae of erythema multiforme arise predominantly in the central portion of the erythematous lesions. Pruritus is much less marked than in the gestation syndrome. Arsenical therapy is relatively ineffective, but the disease responds well to heavy doses of salicylates.

The estimation of the number and percentage of eosinophils in the blood and the fluid contents of the bullae has been employed as an aid in differential diagnosis. Leredde and Perrin [26] maintained that a marked increase in both the blood and the serous exudate is strongly diagnostic of herpes gestationis. Others, however, have presented much evidence in opposition to this view.[29] It is possible that different conditions exist at various stages of the disease,[14d] the eosinophils showing a marked increase just prior to or during a cutaneous exacerbation.[22b]

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26. Leredde, L. E., and Perrin, C.: Ann. de dermat. et syph. **16**:281, 1895; quoted by Jamieson.[12]

27. Constantino, B. A.: Gior. ital. d. mal. ven., 1925, no. 1; abstr., Dermat. Ztschr. **46**:48, 1926.

28. Gastou, P.: Bull. Soc. franç. de dermat. et syph. **1**: Feb., 1900; quoted by Riecke.[1]

29. Hartzell, M. D.: J. Cutan. Dis. **36**:497, 1918. Engman, M. F., and Davis, R. H.: J. Cutan. Dis. **33**:73, 1915. Neusser, E.: Wien. med. Presse **33**:89, 134 and 174, 1892; quoted by Jamieson.[12] Riecke.[1]

THERAPY

For local treatment aqueous astringent baths, abscission of the larger bullae and topical application of antiseptic lotions have given the most gratifying results.

Roentgen rays, when used on the local lesions, sometimes afford relief. It is possible that more permanent effects may be produced by irradiation of the spine.

Quinine and solution of potassium arsenite appear to be the most effective drugs in general use. The latter, if given in full therapeutic dose, and still better if administered in intermittent courses,[12] has given the most constant results. Eichmann [30] reported one case in which cure was obtained by means of Ringer's solution given intravenously. Tommasi reported two cases in which ovarian extract was administered, with eventual success. In some cases autohemotherapy [31] and injections of horse serum or serum from normal pregnant women [32] have been most effective. Brittmann,[14c] on the other hand, had only partial success with human serum, but effected a permanent cure by means of intramuscular injections of boiled milk.

It is fortunately seldom necessary to induce a premature labor, even though this is the only method which will permanently allay symptoms in the majority of cases.

REPORT OF A CASE

A Hungarian woman, aged 30, was admitted to the dermatologic service of Lakeside Hospital on Aug. 12, 1929. She stated that three weeks prior to admission, during the sixth month of her fourth pregnancy, a light red spot had appeared on her right forearm. This area soon became intensely pruritic, and, following the trauma incident to vigorous scratching, there arose a large firm bleb. Within a few days similar lesions appeared on the left arm, legs and abdomen.

Inquiry into the past history revealed nothing suggesting any serious illness. The patient had been married fourteen years. Her husband had always been well. Three previous pregnancies had resulted in normal children, carried to term without incident. Her last menstrual period occurred some time in January, 1929.

On the skin of the forearms, the legs from the ankle to the mid-thigh and the abdomen were numerous, roughly circular, red, soft, perceptibly raised, erythematous patches or plaques, varying in size from that of a dime to areas several centimeters in diameter. The involved regions were tender to touch, but by no means painful. The majority of these lesions, particularly the larger ones, had already involuted in the central portion and were spreading peripherally in

30. Eichmann, E.: München. med. Wchnschr. **60**:183, 1913; quoted by Riecke.[1]

31. Watrin, J.: Bull. Soc. franç. de dermat. et syph. **31**:41, 1924; abstr., Arch. Dermat. & Syph. **10**:221 (Aug.) 1924. Lévy-Solal, E.: Gynéc. et obstét. **6**: 330 (Nov.) 1922.

32. Mayer, A., and Linser: München. med. Wchnschr., Dec. 27, 1910, no. 52, p. 2757. Veiel, Fritz: München. med. Wchnschr. **59**:1911, 1912.

gyrate arcs. On the active serpiginous borders of these progressing lesions were alined vesicles the size of a match-head, filled with clear serum. In many places the vesicles had coalesced to form tense bullae varying in size from that of a pea to that of a hazelnut, with thick resistant walls. A few of the bullae, especially over the tibiae, had become pustular; some were hemorrhagic, and two

Distribution of eruption at exacerbation on Sept. 28, 1929. The hyperpigmented areas are sites of former bullae.

had already ruptured, leaving dark yellow, sticky crusts. There were no excoriations visible. There were no lesions on the mucous membranes. Physical examination revealed no other pathologic conditions. The blood pressure was 110 systolic and 65 diastolic.

The urine was clear and acid and contained traces of albumin and a little lactose. Examination of the blood showed 4,500,000 erythrocytes, 85 per cent

hemoglobin, 8,200 total leukocytes, with 60 per cent polymorphonuclear neutrophils, 25 per cent lymphocytes, 4 per cent transitional cells, 2 per cent eosinophils and no basophils. The Wassermann reaction of the blood was negative. The blood clotting time was normal (six and a half minutes with a 9 mm. tube). Smears from the vesicles showed from 1 to 4 per cent eosinophils.

Local therapy consisted of abscission of bullae, permanganate baths and subsequent drying under a cradle with suspended lights. A solution of 5 per cent gentian violet was applied to all nonepithelialized surfaces. Two roentgen treatments of one-fourth skin unit each were administered to lesion-bearing areas.

The patient was, at first, tried on heavy doses of salicylate. Since no improvement resulted, solution of potassium arsenite was administered in increasing dosage. Fresh bullous efflorescences continued to appear at intervals of from three to five days until September 8, though at no time were lesions of any description found on a mucous surface. On September 15, arsenical medication was discontinued because of the onset of mild gastro-intestinal symptoms. The total amount of solution of potassium arsenite given up to this time equaled 42.2 cc. The skin now became and remained smooth, exhibiting only a rather striking pigmentation to mark the sites of preexisting lesions.

The patient was discharged from the hospital on September 24, but returned in four days with the legs and forearms studded by another bullous exacerbation of three days' duration. A photograph taken at the time of her return demonstrates the general character of the cutaneous involvement. There were still no toxic manifestations. The leukocytes had increased to 12,000 with a mild eosinophilia of 7.3 per cent at the expense of the polymorphonuclear neutrophils. The blood chemistry at this time was normal.

The same therapy was employed as that used on the previous admission. The cutaneous lesions regressed slowly, the progress being hindered by frequent exacerbations, until November 7, when labor took place, and a normal male child was delivered. The following day an enormous crop of bullae appeared on the extremities. These all subsided under local therapy alone, so that by the eighth day post partum all active manifestations had permanently disappeared. The baby showed no cutaneous lesions and appeared to be normal in every respect.

The patient was discharged on December 9. She failed to return for observation but, when interveiwed at her home nearly three years later, stated that neither had she become pregnant nor had she suffered any cutaneous recurrence in the interval. Her youngest child was the picture of health.

SUMMARY

A report is made of a case of herpes gestationis.

Herpes gestationis is a rare, pruritic, bullous disease of the skin, indistinguishable from dermatitis herpetiformis by either clinical or laboratory methods. Owing to the fact that the gravid state is its direct inciting cause, this disease is worthy of separate consideration, and is deserving of the attention of the general practitioner and obstetrician.

CLINICAL SPECTROSCOPY

A STUDY OF BIOPSY MATERIAL TAKEN FROM PATIENTS RECEIVING GOLD SODIUM THIOSULPHATE

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AND
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In 1890, while studying the bacteriology of the tubercle bacillus, Robert Koch discovered that the gold ion had the property of inducing bacteriostasis in vitro. This observation was an incentive for further investigation of the chemotherapy of tuberculosis. A knowledge of synthetic chemistry enabled the investigators to prepare gold compounds which theoretically, when given intravenously, would inhibit the growth of the tubercle bacillus. Of these compounds, gold sodium thiosulphate, as prepared by Møllgaard,[1] was used extensively in the treatment of pulmonary tuberculosis.

The assumption that lupus erythematosus was of tuberculous origin led to the introduction of various gold preparations in the treatment of this dermatosis. Schamberg and Wright [2] were the first to use gold sodium thiosulphate for this disease. When dissolved in distilled water, the product dissociates according to the equation:

$$Na_3Au(S_2O_3)_2 \rightleftarrows 3Na + AuS_2O_3 + S_2O_3$$

Since the intravenous injections of gold sodium thiosulphate have been proved therapeutically effective in the treatment of lupus erythematosus, an investigation was started to develop a method suitable for the detection of gold in the skin. In searching for an analytic method which would give satisfactory results with a biopsy small enough not to disfigure or incapacitate the patient, the one appearing most applicable was spectrographic analysis.

In order to determine the sensitivity of the method, a biopsy specimen was taken with a 3/16 inch (0.47 cm.) punch from a patient who had received 0.6 Gm. of gold sodium thiosulphate. The sample of skin was a cylinder about 3/16 inch (0.47 cm.) in diameter and 1/8 inch (0.32 cm.)

From the Department of Dermatology and Syphilology, New York Post-Graduate Medical School and Hospital, George M. MacKee, director.

1. Møllgaard: Chemotherapy of Tuberculosis, Copenhagen, A. Busck, 1924.

2. Schamberg, J. F., and Wright, C. S.: The Use of Gold and Sodium Thiosulphate in the Treatment of Lupus Erythematosus, Arch. Dermat. & Syph. **15**:119 (Feb.) 1927.

in height, and weighed about 0.025 Gm. After the sample had been placed in the crater of the bottom electrode, an arc was struck between the graphite electrodes. The arc was run on 110 volts, direct current, and the resistances were adjusted until 5 amperes was flowing in the circuit. The light emitted by the burning sample was focused by a quartz condensing lens onto the slit of a Hilger El quartz spectrograph, and the spectrum was photographed. To facilitate the identification of the gold line, a spectrogram of gold was taken in juxtaposition to that of the sample. The enlargement shown in figure 1 proves conclusively

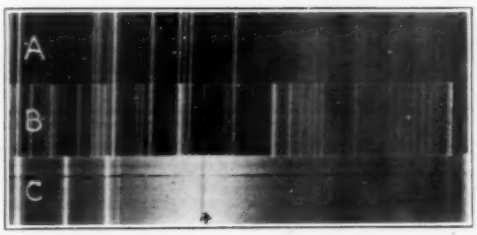

Fig. 1.—Spectrogram of gold (*C*) taken in juxtaposition to a sample of skin (*B*). *A* is a spectrogram of graphite. The arrow indicates the gold line (2,675.95 angstroms).

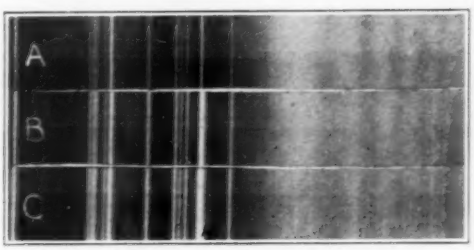

Fig. 2.—Spectrograms obtained with standard solutions of gold: *A*, solution 1 (0.0000001 Gm. of gold to 1 drop); *B*, solution 2 (0.00001 Gm. of gold), and *C*, solution 3, (0.001 Gm. of gold). The arrow indicates the gold line.

that by this method a biopsy with a $\frac{3}{16}$ inch (0.47 cm.) punch gives sufficient material for the detection of gold in the skin.

After the first test for gold in a sample of skin proved that the method was applicable to the problem, a series of standard solutions was prepared so that a general idea of the quantities of gold present might be obtained. The standard solutions were made by dissolving 0.25 Gm. of gold in 10 cc. of aqua regia and diluting this until solutions of the following concentrations resulted: standard solution 1, 1 drop of which contains 0.0000001 Gm. of gold; standard solution 2, 1 drop of which contains 0.00001 Gm. of gold, and standard solution 3, 1 drop of which contains 0.001 Gm. of gold. In taking the spectro-

grams of these solutions, a drop of solution was placed in the crater of a graphite electrode which was heated gently until all the solution had evaporated. The salt deposited on the electrode from the solution was burned in a direct current arc as described previously, and the spectrum was photographed. In figure 2 is shown the graded series of the standard solutions.

When this preliminary work was finished, a series of biopsies was performed for patients who had been treated with various amounts of gold sodium thiosulphate intravenously. The history of the cases and the spectrograms obtained from the biopsies follow.

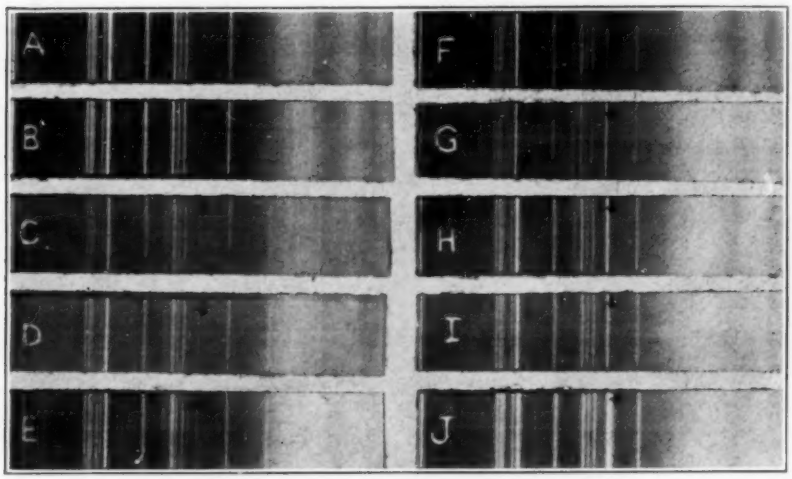

Fig. 3.—Spectrograms of graphite, standard solutions and biopsy specimens from various parts of the body of patients who received treatment with gold sodium thiosulphate. *A*, graphite; *B*, specimen from the right leg in case 1 (dose, 0.05 Gm.); *C*, specimen from the left side of the abdomen in case 4 (dose, 0.1 Gm.); *D*, specimen from the second lumbar region in case 8 (dose, 0.27 Gm.); *E*, specimen from the left thoracic region in case 10 (dose, 0.85 Gm.); *F*, specimen from the left forearm in case 13 (dose, 1.46 Gm.); *G*, specimen from the right thigh in case 14 (dose, 6.246 Gm.); *H*, specimen from over the right lumbar vertebra in case 15 (dose, 7.965 Gm.); *I*, standard solution 1 (0.0000001 Gm. of gold to 1 drop), and *J*, standard solution 2 (0.00001 Gm. of gold).

HISTORY OF CASES

Biopsy material from patients who had received 0.1 Gm. or more of gold sodium thiosulphate gave a positive test for gold, even though the specimens were taken from various parts of the body. In cases 14 and 15, although 80 per cent or more of the total dosage had been administered several years previous to the biopsies, the amount of gold present was proportional to the total dosage.

Since silver has been shown [3] to be a normal constituent of skin, twenty-five samples of normal skin were tested to determine whether gold was also a normal constituent. The samples were taken from a group of people ranging in age from 6 months to 65 years. In no instance was a trace of gold found. From this group of tests it appears that gold is not present in normal skin.

When the spectrograms of the various samples are examined carefully, it is obvious that the amount of gold in the skin increases in proportion to the total amount of gold injected. This effect is shown clearly in the spectrograms in figure 3. The increase in the density of

Data on Patients Who Received Treatment with Gold Sodium Thiosulphate

Case	Age	Date of Injection	Injections, No.	Site of Biopsy	Dose, Gm.	
1	19	5/ 9/33	1	Right leg	0.050	
2	24	5/ 5/33	1	Right scapulae	0.050	
3	35	4/ 3/33	1	Left side of abdomen	0.100	
4	35	4/ 4/33	1	Left side of abdomen	0.100	
5	22	4/17/33 to 4/29/33	2	Left leg	0.150	
6	38	3/31/33 to 5/ 8/33	5	Right arm	0.250	
7	23	3/ 9/33 to 4/13/33	5	Left flank	0.250	
8	29	10/26/32 to 11/19/32	7	Second lumbar region	0.270	
9	25	9/ 1/32 to 5/ 8/33	20	Right forearm	0.800	
10	52	11/ 2/32 to 3/ 1/33	18	Left thoracic region	0.850	
11	20	4/ 2/32 to 6/ 2/32	17	Right flank	1.225	
12	59	10/24/31 to 6/25/32	33	Left leg	1.110	1.360
		3/18/33 to 5/ 6/33	7	Lumbar region	0.250	
13	54	11/26/32 to 12/23/32	9	Lumbar region	0.660	1.460
		12/27/32 to 1/20/33	8	Left forearm	0.800	
14	45	9/ 8/27 to 10/10/29	50	.....	5.075	6.245
		10/23/30 to 4/27/33	75	Right thigh	1.170	
15	36	5/12/30 to 7/ 2/31	111	.....	5.425	7.965
		8/ 6/31 to 12/ 3/31	36	.....	1.800	
		3/ 5/32 to 9/19/32	23	Over first lumbar region	0.740	

the gold line designates an increase in the amount of gold in the sample, since all spectrograms were photographed under identical conditions.

COMMENTS

From these results it appears that, owing to its chemical and physical properties, the negative gold thiosulphate ion, when injected intravenously, causes a connective tissue response. The extent of this reaction determines the efficacy of the treatment in that it leads to the repair of diseased tissue by the distribution and localization of the drug as well as by the excretion. The connective tissue response can be interpreted as an immediate reaction of the undifferentiated mesen-

3. Spiegel, L.: A Discoloration of the Skin and Mucous Membranes Resembling Argyria, Following the Use of Bismuth and Silver Arsphenamine, Arch. Dermat. & Syph. **23**:266 (Feb.) 1931.

chyme. It persists throughout the life cycle of the organism as a mobile tissue of first and last importance in the protective and metabolic functions of the body.

CONCLUSIONS

1. The presence of heavy metals in the skin can be detected expeditiously by spectrographic methods.

2. Gold is not a constituent of normal skin.

3. The amount of gold in the skin is directly proportional to the total dosage.

4. From our observations it is evident that gold is uniformly distributed in the cutis in patients receiving gold sodium thiosulphate.

5. The deposition of gold in the cutis appears to be permanent.

6. A patient who has received a total dosage of 0.1 Gm. will give a positive test for gold.

CONTACT ECZEMA

RUBBER CEMENTS AS ADHESIVE IN PATCH TESTING

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The conventional method of applying the patch test, in an effort to determine the causative eczematogenous substance in contact eczema, consists in placing the substance to be tested on the skin of the forearm, back or thigh of the subject, covering it with an impermeable material such as cellophane or waxed paper and anchoring the latter to the skin by means of adhesive tape. The adhesive plaster acts as a dermal irritant in a large proportion of the cases. The resulting dermatitis not only interferes with the proper subsequent readings of the tests but frequently causes an annoying transient dermatitis, especially when a large number of patches are applied. To obviate the objectionable feature of this method, a substitute for the adhesive material was sought.

Various types of glue and liquid cement were employed for anchoring the covering material to the skin. The glues and several brands of cement were immediately discarded because of the lack of elasticity and the adhesive quality of the dried patches. After a trial of several months, transparent cements entirely replaced adhesive plaster in the application of the patch or contact test in my office. "Duco," "Ever-Fast," "Grippit" and "Frisket" cement were found to vary in minor details. As a final choice, mainly because of the greater elasticity of the dried patch and the cheapness of the product, "Frisket" liquid rubber cement was selected for use as a routine.

SOURCE OF MATERIALS

"Frisket" cement is a transparent, liquid rubber, adhesive material used in the dry mounting of photographs. For 45 cents a half pint can, it may be purchased from any store dealing in photographer's supplies. It is placed by a local druggist in a metal tube for ointment with a screw-cap and is then ready for use.

Closely woven cotton cloth, such as Duretta or bird's-eye, is used as the covering material. One square yard of the cloth, which costs 25 cents, makes approximately three hundred test pads of the maximum size employed. For making the coverings rapidly and of uniform size, the material is cut in strips 1¾ inches (4.4 cm.) in width. By the proper folding of the strips and the use of a circular card board pattern,

the diameter of which is equal to the width of the strips, the entire number of pads contained in the yard of cloth can be cut by an office assistant in a few minutes. Ordinary gauze bandage may be used except when powders are employed as the testing material.

APPLICATION OF THE PATCH

The material to be tested is placed on the skin and "rimmed" with the cement from the nozzle of the tube. The cloth covering is immediately applied. When speed is not a factor, the adhesive material may be placed directly on the edges of the covering cloth before appli-

Completed contact tests in position on the back: 1. The substance to be tested with the cement is so placed that it comes in contact with the margin of the covering cloth. 2. The arrow points to a positive reaction in a patient sensitive to leather. The area is characterized by erythema and vesicles. Below the cutaneous reaction is a patch turned back, showing a strip of leather on the under surface of the cloth.

cation to the skin. In either instance drying is rapid, requiring only a few seconds until the application of the patch is complete. Such patches have been found to offer no inconvenience to the patient, are accompanied by a minimum of cutaneous irritation and remain in situ for four or five days, even with daily bathing. Excess of the cement material at the edge of the patch can be readily rubbed away after drying. A momentary tingling sensation is felt at the site of contact immediately following the application of the patch. This is apparently due to the

rapid evaporation of the solvent contained in the cement. On removal of the patch after twenty-four hours or longer, a transient erythema has been observed to develop at the edge of the cloth where the cement was in contact with the skin. This is a simple traumatic erythema due to the pulling of the skin in removing the patch; it develops several minutes after the removal of the cement and therefore does not interfere with the proper reading of the test.

ADVANTAGES

Among the advantages which may be enumerated for this method are elasticity and adherence of the patch and cheapness, speed and neatness when a large number of tests are applied. Because of the neatness of the patch, the method presented is especially valuable in testing local sensitizations on the face, neck and hands, where very small patches may be applied. It is equally serviceable in tests with dust, powders, pollens and pulverized or dried vegetation, such as flowers, vegetables, shrubbery and grasses. Substances in a fine state of pulverization can be kept in direct contact with the skin for a prolonged period without loss from beneath the material covering the patch, thereby assuring an accurate test.

Contact tests performed with this cement on a large number of eczematous patients failed to evoke dermatitis in a single instance, which was in marked contrast to the action of adhesive tape in the same subjects. The substitution of the former material for the adhesive in the contact test has eliminated the objectionable dermatitis so frequently encountered when adhesive plaster is used as the anchoring substance.

It occasionally becomes necessary to apply fifty or more testing substances during a single visit by the patient. The assured absence of a dermatitis immediately surrounding the tested site permits the observer to label tested areas by writing with silver nitrate solution directly on the skin at the margin of the patch. This procedure eliminates error in the subsequent determination of a substance placed at a given site and allows recording of delayed reaction up to five or six days.

1410 Medical Arts Building.

ERYTHROPLASIA OF QUEYRAT

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AND
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This report is submitted to call attention to a relatively rare form of precancerosis, of which we have found no mention in the American literature.

Although Paget [1] in 1874 and Tarnowsky in 1891 recognized and mentioned diseases of the glans penis which were in all probability erythroplasias, the first detailed and exact reports of this malady in the literature are those presented in 1893 by Fournier and Darier,[3] who designated it as epitheliome papillaire nu. Another French author, Queyrat,[4] in 1911 devoted himself to a more exhaustive study of the condition and gave it the name of érythroplasie. Darier accepted this new name, and the disease is now generally known as the érythroplasie, erythroplasia, érythroplakie or erythroplakia of Queyrat.

About forty cases have been described, and the condition is one which so invariably becomes a malignant neoplasm that it is universally recognized as precancerosis in the strictest sense of the word.

The localizations which have been described include the penis, frequently the glans, the glans clitoris and other parts of the vulva, the lips and buccal mucosa and, rarely, the skin itself.

It is noteworthy that many of the cases have been associated with syphilis, so that syphilis was formerly considered an etiologic agent, or the predisposing cause. However, syphilis is certainly not the etiologic factor, for many typical cases exist in which syphilis has been absent. Nevertheless, syphilis is present in a sufficient number of cases of erythroplasia to make it obvious that here, just as in other precanceroses and cancers of the mucous membranes, syphilitic infection in some way

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From the Department of Dermatology, New York Post-Graduate Medical School of Columbia University (Director, Dr. George M. MacKee).

1. Paget: St. Bartholomew's Hosp. Rep. **10**:87, 1874.

2. Footnote 2 has been deleted by the authors.

3. Fournier, A., and Darier, J.: Epitheliome bénin syphiloïde de la verge (epithélioma papillaire), Bull. Soc. franç. de dermat. et syph. **4**:324, 1893.

4. Queyrat: Erythroplasie du gland, Bull. Soc. franç. de dermat. et syph. **22**: 378 (Nov. 9) 1911.

predisposes to these changes.[5] There was no evidence of syphilis in the case reported here.

It does not seem necessary to go into a detailed review and description of the various cases in the literature. The excellent general description which Darier [6] gives in his "Précis de dermatologie" will suffice:

> Erythroplasia is found on the buccal mucosa, the tongue, the lips, the cheeks, the glans penis and the foreskin, or on the vulva in the form of a well circumscribed, erythematous surface, which is velvety and shiny. Its etiology is unknown. Syphilis is not regularly present in these patients. This condition grows very slowly, persists indefinitely and resists all topical remedies; excision or total destruction by cauterization or, preferably, with carbon dioxide snow is necessary, for sooner or later an infiltrating prickle cell epithelioma develops, with early involvement of the regional glands. The differential diagnosis must consider a syphilid, a lupus vulgaris of the mucous membranes, a basal cell epithelioma and, on the genitals, a diabetid [Monilia]. In the cases which I know, histologic examination has shown slightly variable lesions. Those which seem to me to be the most characteristic consist of hypertrophy of the rete pegs, without dyskeratosis; these, increased in length and in breadth, are superficially abraded; one finds a moderate cellular infiltration in the upper parts of the cutis. In other cases, clinically identical, one has found dyskeratotic changes which are definitely of the type of Bowen's disease (Hudelo and Caillíau, Richon, on the vulva; G. Barbier, on the mouth), [Sulzberger [7]].

REPORT OF CASE

History.—M. S., white, a Christian, 39 years of age, a salesman, was first seen at the dermatologic clinic of the New York Post-Graduate Hospital on Oct. 20, 1931. Beyond the fact that his mother had died of cancer at the age of 56, neither the family nor personal history contained data relevant to the condition for which he sought relief.

The patient stated that three months previously he had noted a pinhead-sized "pimple" on the anterior portion of the dorsal surface of the glans penis. The lesion formed a scab which the patient removed, thus disclosing a reddened and weeping surface. The lesion grew centrifugally, in spite of the application of ordinary remedies.

Examinations.—When the patient was first examined, there was a sharply defined, approximately round lesion, slightly larger than a pea, on the dorsal aspect of the penis, immediately anterior to the sulcus coronarius. There were no palpable glands in the inguinal regions. There were no other cutaneous changes, except a typical acne of the back. And there were no lesions of the mucous membrane.

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5. Touraine, Renault and Hesse: Bull. Soc. franç. de dermat. et syph. **39**:655 (June) 1932; Sézary, A.: ibid. **39**:605 (May) 1932; Gernez and Touraine: ibid. **39**:519 (April) 1932; Castiglioni, G.: Arch. di anat. e istol. pat. **2**:475, 1931; Wise, F., and Sulzberger, M. B.: Abstracts in Dermatology and Syphilology, Practical Medicine Series, 1932, Chicago, The Year Book Publishers, Inc., 1933, p. 241.

6. Darier: Précis de dermatologie, Paris, Masson et Cie, 1928.

7. Sulzberger, Marion B.: Ein Fall von Leukoplakia et Kraurosis vulvae mit Tumorbildung und histologischem Befund der Bowenschen Krankheit, Zürich, H. Hasch, 1926.

The penile lesion was neither painful nor tender, but was, at times, pruritic. When the moist-appearing surface was wiped dry, tiny droplets of clear fluid were seen almost immediately, appearing at rather regular intervals; after a few moments, the entire surface was again moist. On palpation, the consistency of the affected area seemed to be slightly greater than that of the surrounding skin, but there was no definite infiltration.

Among the diagnoses considered were: precancerosis, drug eruption, artefact or balanitis of unknown origin.

There was no history of any venereal disease, and repeated dark-field examinations and serologic tests produced no evidence of syphilis. Repeated and insistent questioning and careful investigation elicited no history of the ingestion of drugs.

Ordinary local therapy (including ointments of sulphonated bitumen, N. F., ammoniated mercury, U. S. P., balsam of Peru, wet dressings of various kinds, applications of silver nitrate and iodine and other drugs as well as long-continued indifferent soothing applications) proved of no avail, and the lesion continued to extend peripherally.

On Feb. 16, 1932, one of us (Sulzberger) [8] presented the case as one for diagnosis before the Section on Dermatology of the New York Academy of Medicine, with the following suggestions: (1) precancerosis, (2) drug eruption and (3) balanitis of unknown etiology. Dr. Hermann Goldenberg of New York, on seeing the patient, called attention to the fact that the condition closely resembled the form of precancerosis known as erythroplasie of Queyrat.

On comparison with the original descriptions given by Queyrat,[4] the conclusion was reached that the clinical appearance and course in this case was, in many respects, identical with those described by the French author and previously described by Fournier and Darier under the name of épithéliome papillaire nu.

The patient was not seen again after February 16 until April 2, 1932. During this interval, he had been under treatment at another clinic.

The lesion had grown to approximately twice the size observed on the first examination, and a similar lesion had appeared on another part of the glans penis (fig. 1).

A biopsy was done on April 7, and the histologic evidence confirmed the clinical diagnosis of erythroplasia.[9]

Treatment with filtered and unfiltered roentgen rays was then administered, and from May 31 to August 30 the patient received 2¼ erythema units of roentgen rays filtered through 3 mm. of aluminum and 2¾ erythema units of unfiltered rays.

The patient was again presented on October 4 before the Section on Dermatology of the Academy of Medicine, by one of us (Sulzberger) with the established diagnosis and the histologic sections, and the statement was made that the lesions had continued to grow in spite of all therapy.[10]

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8. Sulzberger, M. B.: Arch. Dermat. & Syph. **26**:1124 (Dec.) 1932. Through an error, inexplicable to us, this case was published under the title "Granuloma Inguinale," although it had been presented as "A Case for Diagnosis (Precancerosis? Drug Eruption?)."

9. On May 25, one of us (Sulzberger) was able to show both the patient and the histologic section to Prof. J. Jadassohn, of Breslau. He was of the opinion that the case was, both clinically and histologically an erythroplasia. He found that the clinical lesions were perhaps slightly more elevated above the normal skin than in the cases of this disease which he had previously observed.

10. Sulzberger, M. B.: Erythroplasia of Queyrat, Arch. Dermat. & Syph. **27**: 688 (April) 1933.

The patient again absented himself from treatment, presumably in order to try other therapeutic procedures, until September 22. On this date, almost the entire glans penis was covered with a bright red, moist, noninfiltrated, slightly edematous lesion which descended into the sulcus coronarius, where it was sharply demarcated with a polycyclic outline. The lesion surrounded the external meatus and seemed to penetrate the opening and include portions of the mucosa.

Another biopsy was done on October 7, and the observations confirmed the previous diagnosis.

The entire lesion was electrocoagulated and the area allowed to heal under wet dressings. A prophylactic high voltage roentgen treatment was given to the inguinal glands on each side.

Fig. 1.—Erythroplasia of Queyrat, of seven months' duration, in patient M. S. (photographed April 7, 1932).

On Feb. 25, 1933, a large portion of the glans penis was covered by apparently healthy skin, but small islands of erythroplasia had reappeared around the meatus and on the dorsal surface.

Since this date the patient has not reported for further treatment.

Histologic Examination.—Examination with the low power lens (fig. 2) revealed the entire epidermis to be irregularly hypertrophied. In some parts the interpapillary masses were much broadened and fairly regular; in others, they were markedly irregular; in still others, they were thin and markedly elongated, with the long, narrow papillae reaching almost to the surface of the epithelium. The broadened intrapapillary masses predominated. These extended into the cutis for about one third of its thickness. In the areas with the elongated and narrow interpapillary pegs, the suprapapillary portions of the epidermis were conspicuously thin, so that, in parts, only a few rows of cells separated the tops of the papillae from the surface.

The entire epidermal surface was almost naked, as far as the horny layer was concerned, there being only occasional strands of cornified cells. The granular layer was entirely absent.

In the upper cutis, the lymph and blood vessels were greatly dilated; the latter were completely filled with blood cells. There was a moderate interstitial edema throughout the cutis. A great degree of edema was present in the papillary zone which contained, in addition to the dilated vessels, many cells of various types.

The margin of the epidermis cutis was fairly sharply outlined throughout the greater part of the section. In some parts, however, the edema and cellular infiltration blurred the outline.

With medium high power lenses (figs. 3 and 4), the increase in thickness of the epidermis was found to be due both to an increase in the number of cells

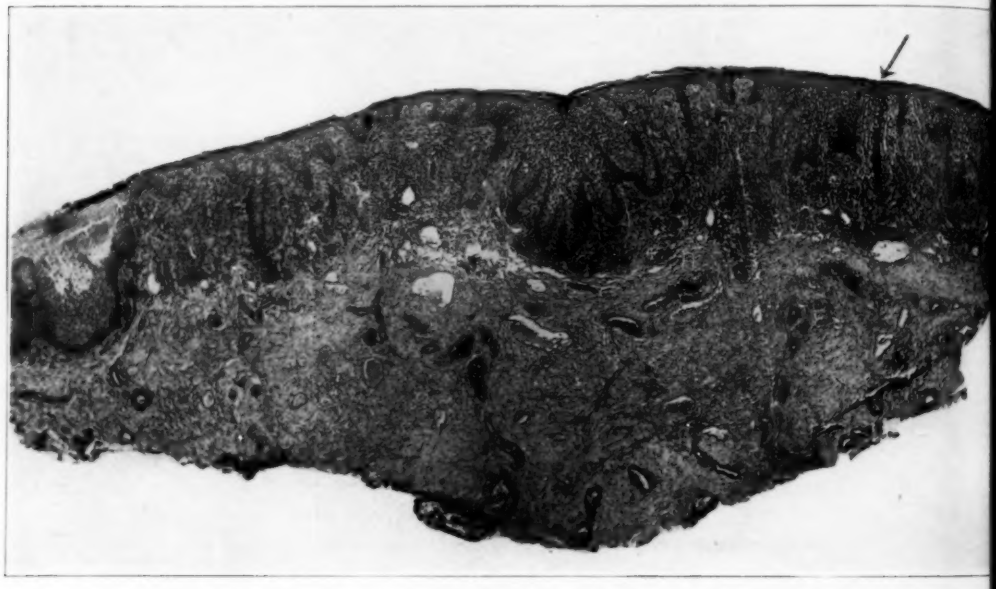

Fig. 2.—Low power photomicrograph showing irregular acanthosis, with alternating long, finger-like papillae reaching almost to the surface and areas of acanthosis en masse. The arrow shows where the dilated blood vessels reach almost to the surface; this probably explains the vivid red of the clinical lesion.

(hyperplasia) and to an intercellular and intracellular edema. In the lower portion of the broadened interpapillary masses, the cells were hydropic, the cell bodies being clear and unstained, and the nuclei somewhat shrunken, apparently lying free in the cell cavity. In the upper portion, numerous cell membranes had been broken through and irregular cavities of various sizes and shapes had formed. These contained varying numbers of cells of different types.

Directly beneath the fragments of horny layer on the epithelial surface were small vesicles containing different types of cells.

The suprapapillary portion of the epidermis showed a marked basal cell disturbance; the basal cell layer was disorganized (i. e., had, to a great degree, lost its regular columnar character).

A high power lens showed that the lowest portions of the epidermis, in particular the cells of the lower part of the thickened interpapillary masses, were variously altered. The nuclei in some were, to a certain degree, enlarged and the chromatin fibers somewhat stretched, and many granules or chromatin nodes were present (vesicular type of nucleus). The outlines of the cell body were not sharp, and the cell body present was distinctly granular.

The lymph or intercellular channels were distinct, but the intercellular threads were not sharp. Occasional mitotic figures were noted. Higher up, approaching

Fig. 3.—Medium high power photomicrograph showing finger-like acanthosis; intracellular and intercellular edema of the epidermis; vascular dilation and marginated infiltration of subepidermic zone in the cutis, and greatly dilated vessels in the upper cutis.

the middle of the epidermal mass, the cells were spindle-shaped; the nuclei, somewhat elongated, filled about two thirds of the cell body. The intercellular spaces were widened, and the connecting threads between the cells were distinctly visible. In the upper portion of the epidermis, there were naked nuclei which were somewhat dense, taking a diffuse stain, so that the chromatin net was no longer visible. These nuclei were smaller than those of the cells below. They lay free within the epidermal cavities previously mentioned. Along with the aforementioned epidermal

cells, there was a considerable number of cells which had apparently come from the cutis and from the blood. Some were rod-shaped and some shot-shaped.

Principally in the upper portions of the epidermis, although also to be found in the lower parts, there was a large number of eosinophil cells.

There was a moderate parakeratosis across the greater portion of the section.

Cutis (figs. 3 and 4).—In the papillary bodies, the blood vessels were markedly dilated, some reaching up to within a few cell layers of the surface of the thin, edematous overlying epidermis. The dilated vessels were filled with erythrocytes.

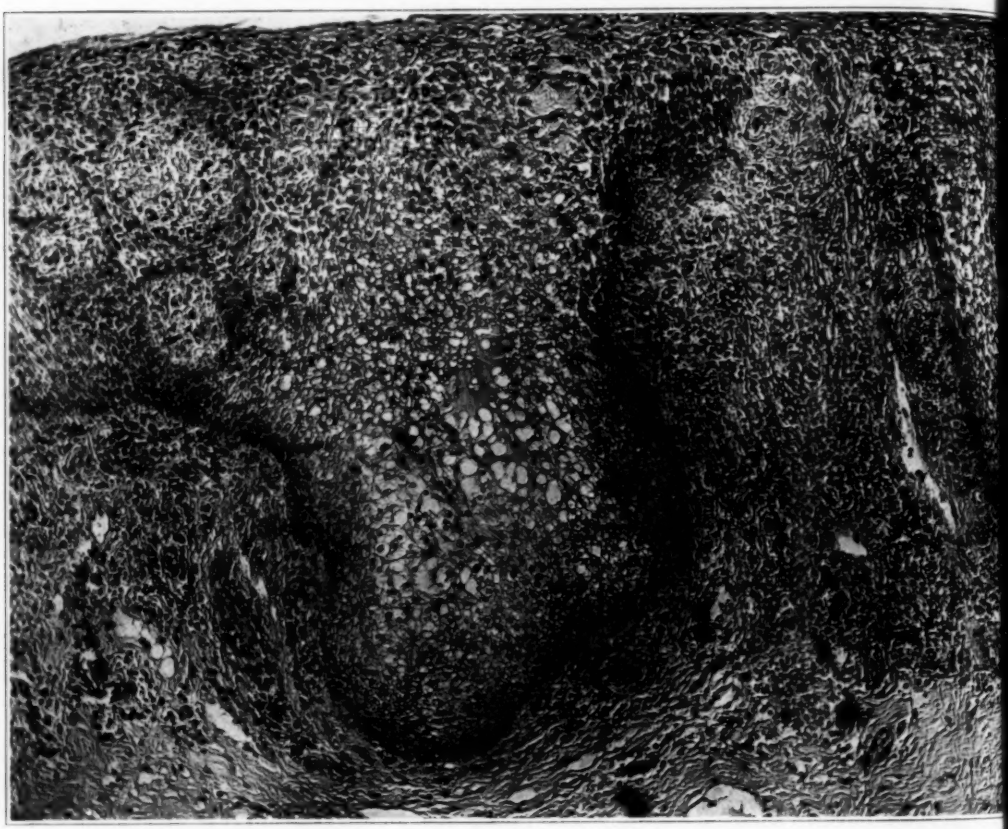

Fig. 4.—Medium high power photomicrograph (high dry) showing vacuolation of the central part of the acanthotic rete peg. The marginal cells were not affected. Note the whorl formation at the upper left. Blood cells (mainly eosinophils) in diapedesis through the epidermis, cellular infiltrate in the papillary body and dilatation of the superficial vessels are shown.

Scattered throughout the framework of the cutis were numerous plasma cells, large and small connective tissue cells and extravascular eosinophils. The endothelium of the vessels was swollen, and its nuclei were prominent. At the lower portion of the papillary body, at its neck or cutis junction, the plasma cells became more numerous and larger and, in some places, almost surrounded or mantled the epidermal pegs. In the upper cutis, in addition to the dilated blood vessels filled

with blood elements, there were dilated perivascular lymphatic spaces, containing round cells and large numbers of plasma cells. An occasional multinuclear plasma cell and polymorphonuclear leukocyte could be noted. There were no evidences of degeneration or sclerosis of the cutis. In the deepest portions of the cutis, the walls of the blood vessel were still found to be swollen (edema).

The elastic tissue in the deep cutis was present, though fragmented. In the region of the cellular infiltrate and below the rete pegs, the fibers were sparse, broken and, in part, crumbled. Subepidermally, the network was, in part, absent. On the top of some of the papillary bodies, a few fine fibers were to be noted.

COMMENT

It seems well to point out, in connection with this case, that the term precancerosis is one which has been much discussed of late in the American literature. There are even some who advocate that this term be dropped.

The case described here is one which should certainly be called a precancerosis. In our opinion, this term must be kept to designate conditions which, while not yet cancer, will, if untreated, practically invariably become cancer.

It will be seen that our definition of this term is of purely statistical nature, and without reference to clinical characteristics or to histologic morphology. With the great number of different skin lesions which have no definite signs of malignancy (macroscopically or microscopically), and which yet well nigh inevitably become malignant (for example, Paget's disease, Bowen's disease, senile keratoses, Dubreuilh's circumscribed precancerous melanosis or melanotic freckles [Hutchinson]), it is obviously impossible to give a morphologic description of a precancerosis. This truth becomes even more evident when one remembers that many cutaneous lesions, such as warts, condyloma acuminata and certain nevi, present many of the histologic characteristics of threatening or beginning malignancy, and yet only exceptionally become cancerous.

A comprehensive discussion of the definitions and use of the word precancerosis was given by the late Bruno Bloch,[11] whose pioneer studies and experiments in this field have been of the greatest importance. Bloch pointed out the superlative practical necessity for the preservation of the term precancerosis, in spite of its lack of morphologic precision. He illustrated his point with a comparison of the roentgen warts that he produced on the ears of rabbits with the tar warts occurring on the backs of white mice. Although clinically and histologically almost identical in appearance, and although both follow the application of known carcinogenic noxae, the roentgen wart on the

11. Bloch, Bruno: Cancers and Precancerous Affections from the Dermatological Viewpoint, Cancer Rev. **7**:65 (Feb.) 1932; Zum Begriff und Wesen der Präkankerose, Dermat. Wchnschr. **32**:1164, 1930; Der experimentelle Krebs, Schweiz. med. Wchnschr. **51**:1218, 1927.

rabbit's ear does not become cancerous, while the tar wart of the mouse usually does. Clinical and statistical evidence has proved that the latter is a precancerosis, while the former is not (Miescher,[12] and Schürch[13]).

In this communication, we have called attention to another, and perhaps not universally recognized, form of lesion, which experience alone and not clinical or histologic morphology has proved to be precancerous. The erythroplasia of Queyrat is particularly prone to early metastasis, must be recognized as precancerous and, in spite of its benign appearance, should be treated as cancer.[14]

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12. Miescher, Guido: Die Entstehung der bösartigen Melanome der Haut, Virchows Arch. f. path. Anat. **264**:86, 1927.

13. Schürch, O.: Studien über präcancerosen mit besonderer Berücksichtigung des experimentellen Röntgencarcinoms, Ztschr. f. Krebsforsch. **32**:449, 1930; **33**:1, 1930.

14. Freund, Helmuth: Ueber Erythroplasie, Arch. f. Dermat. u. Syph. **167**: 401, 1933.

ONYCHOGRYPHOSIS

REPORT OF AN UNUSUAL CASE

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AND
MINNIE OBOLER PERLSTEIN, M.D.
CHICAGO

This case is reported because of the extreme malformation of the toe-nails associated with a marked lichenification of the skin on the legs and hyperkeratosis of the soles.

Fig. 1.—View of dorsa of feet, showing ram's horn configuration of the toe-nails.

A colored woman, aged 73, was admitted to the Cook County Hospital with a generalized arteriosclerosis, hypertension and arthritis of the hip. In addition, she presented an unusual deformity of the toe-nails. She stated that in recent years

From the Dermatological Service, Cook County Hospital, Chicago.

Fig. 2.—View of plantar surface of feet showing markings on the nail.

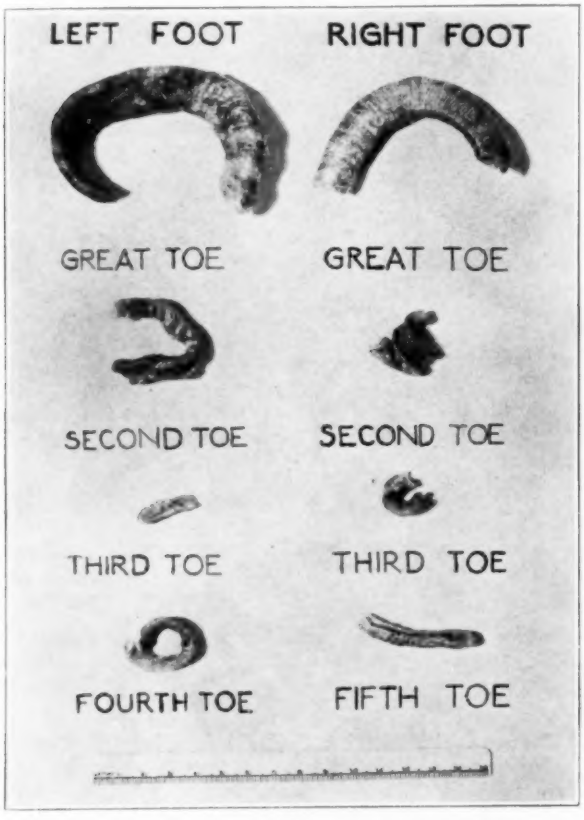

Fig. 3.—Photograph of nails after removal.

her toe-nails had shown a tendency to rapid growth, and that she had had them trimmed frequently. Because of her arthritis she was unable to bend over to cut her nails, and was dependent on others to do this. The nails had not been cut for the past two years, with the resultant overgrowth noted at the time of the examination (figs. 1 and 2).

She presented a deformity consisting of increased length and thickening of all the toe-nails. The great toe-nail showed the greatest changes; each measured approximately 6 inches (15.24 cm.) in length; the nails were deformed, convex and twisted, and resembled a ram's horn. The other toe-nails were involved to a lesser extent, their length varying from ¾ to 2 inches (0.19 to 5.08 cm.). Some of the nails were curved in a spiral fashion. Although the nails were thickened, there was no overgrowth of the left fifth and the right fourth toe-nails, because of the pressure of the adjacent toes (fig. 3).

The nails were slightly lustrous, dirty yellowish brown to grayish white, and their external surfaces were marked with longitudinal ridges and transverse markings of varying depth. Here and there was a flaky horny plate. The inferior surface of the nails was brownish gray with a deep median furrow from which there radiated, to the nail border, irregular, flaky, oblique transverse, ridgelike markings. These changes were most marked on the great toe-nails.

In addition there was marked thickening of the skin over both feet, including the soles, and here and there on the sides of the feet were discrete areas of localized hyperkeratosis of almost stony hardness. The skin over both legs was greatly thickened, and showed hyperkeratosis. Thick lichenified plaques with a tendency to the formation of longitudinal folds and furrows were present, especially about the lower part of the right leg and about the ankle.

The upper extremities and the finger-nails were unchanged.

The redundant toe-nails were removed (fig. 3).

104 South Michigan Avenue.

30 North Michigan Avenue.

LYMPHOGRANULOMA INGUINALE OF THE TONGUE AND CERVICAL GLANDS

REPORT OF A CASE

DAVID BLOOM, M.D.
NEW YORK

The history of lymphogranuloma inguinale, for which name Durand, Nicolas and Favre [1] are responsible, dates back at least to 1859, when the French surgeon Chassaignac [2] described this disease entity. According to Hellerstrom,[3] the description of some buboes given by Greek, Roman and Arabian physicians coincides with the clinical picture of lymphogranuloma inguinale. There is an interesting and extensive literature on this subject, particularly since the introduction of the intradermal test by Frei [4] in 1925, known since then as the Frei test. Of the many papers written on this subject I wish to mention the thesis by Phylactos [5] in 1922, the monographs by Fischl [6] in 1927 and that by Hellerstrom [3] in 1929; of papers written in this country, one by Pardo-Castello [7] and a comparatively recent one by DeWolf and Van Cleve.[8]

Read at the Annual Meeting of the Medical Society of the State of New York, New York, April 5, 1933.

From the Department of Dermatology and Syphilology of Bellevue Hospital and the University and Bellevue Hospital Medical College (services of Dr. Howard Fox).

This patient was presented before the New York Academy of Medicine, Section of Dermatology and Syphilis, October, 1932.

1. Durand, J.; Nicolas and Favre: Lymphogranulomatose inguinale subaigue d'origine génitale probable, peut-être vénérienne, Bull. et mém. Soc. méd. d. hôp. de Paris **35**:274 (Jan. 31) 1913.

2. Chassaignac, E.: Traité pratique de la suppuration et du drainage chirurgical, Paris, V. Masson, 1859, p. 354.

3. Hellerstrom, Sven: A Contribution to the Knowledge of Lymphogranuloma Inguinale, Acta dermat.-venereol. supp. 1, 1929, p. 5.

4. Frei, Wilhelm: Eine neue Hautreaktion bei Lymphogranuloma inguinale, Klin. Wchnschr. **4**:2148 (Nov. 5) 1925.

5. Phylactos, Adrien: Lymphogranulomatose des ganglions inguinaux, Thèse de Lyon, 1922.

6. Fischl, F.: Lymphogranulomatosis inguinalis, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1927, vol. 21, p. 463.

7. Pardo-Castello, V.: Lymphogranulomatosis inguinalis, Arch. Dermat. & Syph. **14**:35 (July) 1926.

8. DeWolf, H. F., and Van Cleve, J. V.: Lymphogranuloma Inguinale, J. A. M. A. **99**:1065 (Sept. 24) 1932.

Lymphogranuloma inguinale is a venereal disease. The primary lesion is in most instances a tiny superficial erosion which, a few days to two weeks after exposure, appears on the glans or the prepuce in men and on the vulva in women. This primary lesion is so insignificant and of such short duration that it is usually overlooked by the patient. Two to three weeks after exposure the inguinal or subinguinal glands of one or of both sides become swollen; in about a month they reach the size of a goose's egg. Frequently the iliac glands are also involved and can be felt by palpating the abdomen above Poupart's ligament. The slightly painful and tender tumor is hard in consistency, and palpation reveals several almond-sized glands matted together. The overlying skin gradually becomes attached to the tumor and assumes a bluish-violet color in several spots; these spots become soft, break through and form small sinuses which discharge a slight amount of viscous seropus. These sinuses may persist for many months. Before this subacute adenitis reaches its height and the stage of fistulization some of the patients complain of fever, chills, general malaise and rheumatoid pains. The blood may show leukocytosis and an increase in large mononuclear cells at the expense of the polymorphonuclear neutrophil leukocytes.

The pathologic picture of the glands involved is, according to many investigators, characteristic and consists of small necrotic spots, intraglandular stellate abscesses and periadenitis. The abscess cavities are surrounded by epithelioid cells in palisade arrangement. The rest of the gland shows granulation tissue with lymphocytes, polymorphonuclear leukocytes, many plasma cells and some giant cells.

The etiologic agent has not been isolated, but successful inoculation of animals was reported by Levaditi,[9] Hellerstrom,[10] Meyer, Rosenfeld and Anders[11] and others.

Lastly, it should be mentioned that lymphogranuloma inguinale may involve, particularly in women, the anal and rectal regions. Many, if not all, so-called simple inflammatory strictures of the rectum are the result of the anorectal syndrome of this disease.

Within the last year we succeeded in getting under our observation, in the skin department of Bellevue Hospital and the University and Bellevue Medical College (services of Dr. Howard Fox) eleven patients

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9. Levaditi, C.; Ravaut, P.; Lépine, P., and Schoen, Mlle. R.: Recherches expérimentales sur l'étiologie et la pathogénie de la maladie de Nicolas et Favre, Bull. Acad. de méd., Paris **106**:331 (Nov. 17) 1931.

10. Hellerstrom, Sven: Experimentelle Untersuchungen ueber Lymphogranuloma inguinale, Dermat. Ztschr. **61**:395 (Aug.) 1931.

11. Meyer, K.; Rosenfeld, H., and Anders, H. E.: Erfolgreiche Uebertragung des Lymphogranuloma inguinale auf Meerschweinchen, Klin. Wchnschr. **10**:1653 (Sept. 5) 1931.

with lymphogranuloma inguinale, five of whom had rectal strictures. Among the six others there was one with an involvement of the tongue and cervical glands whose case is reported here.

REPORT OF CASE

History.—A. Z., aged 45, a Polish laborer, came to Bellevue Hospital on June 28, 1932, complaining of a sore tongue of ten weeks' duration and of a painful mass on the left side of the neck of five weeks' duration. He had lost more than 10 pounds (4.53 Kg.) in weight since the onset of his illness. He stated that he had gonorrheal urethritis in 1923 and 1925 and a penile ulcer in 1923, for which he had received no treatment.

Fig. 1.—Primary lesion of the tongue and left cervical adenitis two months after beginning of illness.

Following an improper sexual relation with a Negress prostitute in the latter part of April, 1932, a small annoying but not painful "pimple" developed on the tip of the tongue somewhat to the right of the midline. Two weeks later, about the beginning of May, the patient himself incised the lesion with a razor blade; considerable bleeding followed, and soon after the anterior portion of the tongue became swollen. Two to three weeks after the incision a swelling developed under the chin just to the left of the midline and gradually enlarged to the left, extending as far as the lobe of the left ear. It also spread slightly to the right of the midline. At this time, about May 21, the patient consulted a private physician who, after an examination of the blood, told him that he had syphilis. In spite of two intravenous and two intramuscular injections administered within two weeks, the lesion on the tongue became worse, and the mass on the left side of the neck became larger and more painful. Another physician was then con-

sulted who found the Wassermann test of the blood negative. Later the patient also received antisyphilitic treatment at the Presbyterian Hospital without any benefit.

He was then admitted to Bellevue Hospital with the diagnosis of "glossitis and abscess of the neck, syphilitic adenitis and glossitis to be ruled out."

Examination.—The following condition was found: The anterior third of the tongue was markedly enlarged and dusky red, and the mucosa on the upper and under surface of the tongue was granular in appearance and to touch. It was of firm consistency but not hard. The left side of the neck showed a marked swelling which was tender and firm but suggested fluctuation. It extended somewhat from the right of the midline of the chin to the left side close to the lobe of the left ear, involving the submental, submaxillary and mandibular regions (figs. 1 and 2). The skin over the swelling was fixed but not very red. There were several tender, soft areas which suggested a breaking-down process. On July 4 the swelling was incised, and a considerable quantity of light yellow, thick pus was removed. A few days later another incision was made somewhat above the left clavicle and again much thick yellow pus was obtained. While in the hospital the patient had remittent fever which on July 18 reached 104 F.

Fig. 2.—Left cervical adenitis two months after beginning of illness.

The general examination revealed nothing abnormal except the findings mentioned. Various diagnoses were considered: tuberculosis, syphilis and epithelioma, but these were discarded because of negative results of pathologic examinations. Dr. Curth, of the Vanderbilt Clinic, who had seen the patient before he entered Bellevue Hospital, had found that he gave a strong positive reaction to the Frei test and suggested the diagnosis of lymphogranuloma inguinale.

In the beginning of October, 1932, since which time the patient has been coming regularly to the clinic for diseases of the skin, we noticed on the left side of the neck, mainly below and behind the left ear, several walnut to lemon-sized swellings (figs. 3 and 4). These glands soon became soft, and a fair amount of thick, yellowish pus was obtained by aspiration. In order that some gland material for pathologic and bacteriologic study might be obtained, the patient was again sent to the hospital during the latter part of December. The surgeon found it impossible, however, to procure solid material for study, as the tumor behind and below the left ear proved to be a soft necrotic mass full of pus. Since then the swellings on the left side of the neck have entirely disappeared except for an almond-sized induration somewhat to the left of the chin which is in all probability scar tissue formed at the site of a previous incision. The swelling of the tongue has gradually receded under treatment, has become much smaller, less red and covered to a great part with epithelium except in one or two places where dime-sized superficial erosions have appeared and persisted for some time.

Laboratory and Experimental Data.—Roentgen examination of the lungs showed no evidence of tuberculosis. The Wassermann test of the blood was negative.

The erythrocyte sedimentation test, according to the method of Linzenmeier, required fifty-three minutes.

An intradermal tuberculin test gave a positive reaction to 0.001 mg. of old tuberculin.

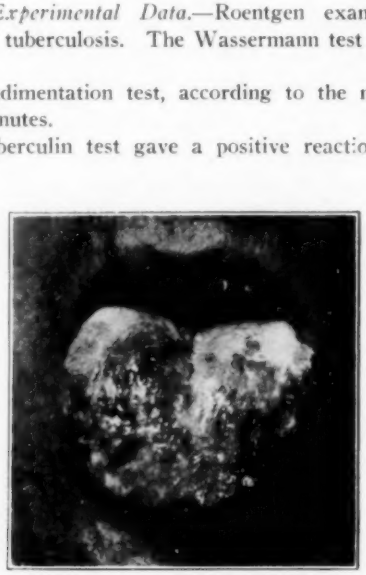

Fig. 3.—Tongue lesion five months after beginning of illness.

Fig. 4.—Several incision scars and swelling below left ear.

A piece of the lesion of the tongue was examined histologically by Dr. Symmers, who gave the following report: "Some hyperplasia of epithelium with occasional pearl formation but no sign of a malignant condition. Beneath the epithelium there is moderately rich fibroblastic connective tissue groundwork scattered through which are numerous cells, most of them of lymphocytic variety. In other words, histologic examination shows nothing specific."

We have repeated the Frei test with five different antigens, to all of which the patient reacted strongly: the reaction papule broke down in each instance after several days and healed after several weeks with a scar (figs. 5 and 6). One of these antigens was sent to me by Dr. DeWolf of Cleveland; another was given to me by Dr. Sulzberger. The other three antigens were prepared from

seropus obtained by aspiration from the swollen inguinal glands of our own patients with lymphogranuloma inguinale.

An antigen was also prepared from the pus obtained by aspirating some of the swollen and fluctuating glands of the neck of the patient himself, according to the method of Frei: The thick pus, which by cultural examination was found sterile, was diluted about ten times with physiologic solution of sodium chloride and heated at 60 C. for two hours on one day and for one hour on the next day. This antigen gave a positive reaction in the patient himself and in five other patients with lymphogranuloma inguinale, while nine patients not affected with lymphogranuloma inguinale did not react at all.

When this antigen was filtered through a Berkefeld filter, no reaction was obtained either in my patient or in the other patients with lymphogranuloma inguinale.

The patient reacted negatively to ulcus molle vaccine, an emulsion of killed streptobacilli in physiologic solution of sodium chloride.

Inoculations of Animals.—For use in these inoculations there were only about 1.5 cc. of pus which had been kept in the icebox for six weeks. After the bacteriologic examination had proved this pus to be sterile, it was injected into the

Results of the Blood Examination and Differential Count

Date	Erythrocytes	Leukocytes	Polymorphonuclears, per Cent	Transitionals, per Cent	Lymphocytes, per Cent
6/28.....	4,350,000	9,100	73	1	26
7/12.....	.....	7,100	47	44	1
7/18.....	.....	7,850	64	22	14
10/13.....	5,400,000	6,900	53	..	47 (small)
1/19/33.....	4,850,000	9,650	62	2	36 (small)

inguinal region of two guinea-pigs. After five days the inguinal region of one of the animals showed an almond-sized hard tumor embedded in an indurated mass, tender to pressure and attached to the underlying tissues. The other guinea-pig showed only a pea-sized gland. Several days later the swelling began to be smaller, and when the inguinal region was incised on the eighteenth day after the inoculation, no enlarged gland was found. Two weeks later the guinea-pig was killed and a necropsy was performed, but nothing abnormal was found in any of the organs except a large pea-sized retroperitoneal gland which on microscopic examination showed nothing abnormal.

Passive transfer was tried by injecting the serum of the patient into the skin of two persons not suffering from lymphogranuloma inguinale and injecting twenty-four hours later, into the same spot, antigens to which the patient had reacted very strongly. No reaction was obtained.

Treatment.—The patient received intravenously altogether about 130 cc. of a 1 per cent solution of antimony and potassium tartrate, which seemed to benefit him. The injections were given twice a week, 5 to 7 cc. at each injection. As he frequently complained of very severe pains in the joints and muscles following these injections, the treatment was often interrupted. After fifteen injections of antimony and potassium tartrate, when it seemed that the lesion on the tongue did not recede quickly enough, the treatment was changed to subcutaneous and intramuscular injections with the patient's antigen, starting with 0.2 cc. and increasing the dose up to 2.5 cc. The treatment was resumed, however, with antimony and potassium tartrate for want of antigen and also because it seemed that the effect of antimony and potassium tartrate was better.

REVIEW OF THE LITERATURE

It is to be expected that extragenital lesions of this condition might occur as in any other venereal disease. That only few cases are reported in the literature is in all probability due to the fact that this disease is not as yet well enough known to the medical profession.

In 1890 Nélaton [12] reported the case of a woman who, following an insignificant erosion of the little finger, had on the inner side of the arm an almond-sized slightly painful tumor which was covered with normal

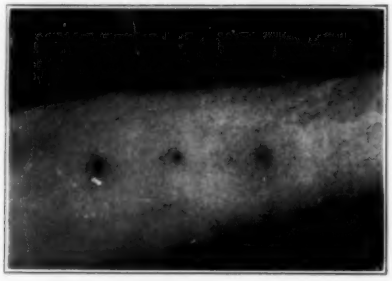

Fig. 5.—Lesions on the arm; at the right, the lesion, an erythematous papule with an erythematous halo around it, is a Frei reaction twenty-four hours after an intradermal injection. The two lesions at the left are papules of several weeks' duration, following a Frei test.

Fig. 6.—The broken-down papule is the same as the corresponding lesion in figure 5 five days later.

skin. A histologic examination of the tumor revealed the picture of lymphogranuloma inguinale adenitis.

In the same year Klotz,[13] who as physician at the German Hospital in New York had seen about 120 patients with inguinal adenitis of this kind within ten years, reported his personal experience with this disease.

12. Nélaton, A.: De l'adénite inguinale subaigue simple a foyers purulents intraganglionnaires, Semaine méd. **10**:402 (Nov. 5) 1890.

13. Klotz, H. G.: Ueber die Entwicklung der sogenannten strumoesen Bubonen und die Indikationen fuer die fruehzeitige Extirpation derselben, Berl. klin. Wchnschr. **27**:132 (Feb. 10) 1890.

While extirpating one of the inguinal tumors, called at that time "strumous bubo," he injured the tip of his left index finger slightly with a sharp hook. Four weeks later he noticed a swelling of the glands at the outer edge of the pectoralis major muscle. A few days later fever and rheumatoid pains in the joints developed. An operation was performed by a colleague who removed all the glands of the axilla and below the clavicle. These glands showed numerous miliary and a number of confluent pus foci.

In 1912 Rost [14] in his report on climatic buboes in Eastern Asia and the West Indies mentioned that "axillary, cubital or cervical glands seem to be involved only exceptionally. This fact is quite strange and, in regard to the etiology, worthy of notice."

In 1922 Phylactos,[5] in his fine thesis on lymphogranuloma inguinale, cited a case of axillary adenitis which was observed by his teacher Favre in a surgeon who had pricked himself during an operation on glands affected with lymphogranuloma inguinale. He also saw a patient with a voluminous cervical adenitis, the histologic picture of which resembled very much that of lymphogranuloma inguinale. Inoculation of guinea-pigs proved negative for tuberculosis.

In 1924 Ravaut, Boulin and Rabeau [15] reported the case of a woman 58 years old in whom, following a sore throat, a left cervical adenitis developed which looked to the authors clinically like lymphogranuloma inguinale. Viscous bloody fluid was aspirated from the gland. Inoculation into a guinea-pig proved negative. The patient recovered after seven weeks' treatment with emetine hydrochloride.

These authors mentioned three other similar cases of cervical adenitis which they observed the clinical picture and evolution of which made them believe that they were dealing with cases of lymphogranuloma inguinale. They expressed the opinion that quite a number of cases of adenitis in different locations of the body which were called scrofulous or tuberculous without any real proof of their tuberculous nature could belong in the group of these special glandular conditions. The cervical adenopathies followed sore throat and persistent tonsillitis. In one case a small white nodule persisted for several weeks on one tonsil, and its nature could not be diagnosed by any laryngologist.

In 1929 Hellerstrom [3] reported the case of a surgeon who in 1904, while preparing for an operation on a resistant strumous bubo, injured himself slightly under the left thumb-nail with the point of a nail file.

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14. Rost, G.: Klimatische Bubonen, Arch. f. Schiffs- u. Tropen-Hyg. **16**:677 (Oct.) 1912.

15. Ravaut, Paul; Boulin, and Rabeau: Etude sur la "poradéno-lymphite" (ou poradéno-lymphite suppurée bénigne a forme septicémique) (ou lymphogranulomatose inguinale subaigue de Nicolas et Favre), Ann. de dermat. et syph. **5**:463 (Aug.-Sept.) 1924.

He had forgotten this injury until some time later, when a small tender ulceration appeared under the nail; this healed under simple treatment. Soon after this, however, the glands in the left axilla became enlarged and slightly tender, associated with general weakness and a low remittent fever. The glands gradually increased in size and became adherent to the overlying skin. Several small bluish-violet swellings with central pseudofluctuation appeared. Actual fluctuation did not develop, and the conglomeration of glands had only a slight tendency to suppurate. His general condition became gradually worse, fever reached 40 C. (104 F.) and albumin appeared in the urine. The glandular mass was then enucleated, and the surgeon recovered. In 1927, twenty-three years later, a Frei test was done on this surgeon and gave a positive reaction, while the test for ulcus molle was negative. The glands which were preserved from 1904 were examined by Hellerstrom, who found the characteristic histologic picture of lymphogranuloma inguinale.

The last case of extragenital localization of lymphogranuloma inguinale recorded in the literature very much resembles the case herein reported. In 1931 Buschke and Curth [16] reported the case of a man 54 years old in whom two or three weeks after a perverted sexual relation with a prostitute an erosion on the tip of the tongue developed; this lesion was followed two weeks later by a slightly painful, slow-growing left cervical adenitis. The Frei test was positive. The Wassermann test of the blood was also strongly positive, but antisyphilitic treatment did not have any influence on the adenitis or on the ulceration of the tongue. Tuberculosis was excluded. Fistulas developed, discharging thin pus, and new swellings developed with the same tendency to become red and soft. No treatment was of any avail except the radical removal of the submaxillary and posterior cervical glands. The lesion on the tongue, however, was quite persistent.

COMMENT

The facts that the lesion on the tongue and the cervical adenitis followed a perverted sexual relation with a prostitute; that the Frei test was in every respect positive, i. e., that the patient gave a strong positive reaction to antigens prepared from his own pus and from the pus of several other patients with lymphogranuloma inguinale, and that those patients reacted to his antigen make it fairly certain that we were dealing here with a case of lymphogranuloma inguinale of the tongue and cervical glands. The lesion on the tongue needs some comment, as it did not present the usual picture of a primary lesion of lymphogranuloma inguinale, which in the majority of cases is insig-

16. Buschke, A., and Curth, W.: Ueber die extragenitale Lokalisation des Lymphogranuloma inguinale (Nicolas-Favrsche Krankheit), Klin. Wchnschr. **10**: 1709 (Sept. 12) 1931.

nificant in appearance and ephemeral in duration. It seems to me quite significant that the ulceration of the tongue in the case of Buschke and Curth showed a similar persistence. The same case which he reported in 1931, Buschke presented before the Berliner Dermatologische Gesellschaft [17] in 1932, and some of the ulcers on the tongue of the patient still persisted. On that occasion he stated that exceptionally some primary lesions are extremely persistent. In the discussion Frei suggested that the ulceration on the tongue might be analogous to the extremely resistant ulcerations on the genitals of women which follow or accompany lymphogranuloma inguinale. Here may be mentioned also the report of Bory [18] of a primary lesion of lymphogranuloma inguinale which he excised after several weeks of existence. It is quite conceivable that in my case the rich lymphatic supply of the tongue is an important factor in the causation of the persistence of the primary lesion.

In regard to the inoculation of guinea-pigs it was disappointing to see the large inguinal tumor disappear, because it had been intended to examine the inguinal gland and also to prepare an antigen for Frei tests to be carried out in my patients with lymphogranuloma inguinale. A recent report, however, by Franz Koch [19] states that this is the usual occurrence when lymphogranuloma inguinale virus is injected into guinea-pigs, and that if these glands are to be examined, they must be removed in the beginning of the third week, when they are of maximum size.

The fact that the lesion on the tongue showed a nonspecific inflammation does not speak against the diagnosis. It is possible that if a biopsy could include the entire thickness of the tongue one would see the pathologic picture of the lymphogranuloma inguinale chancre described by Bory and Phylactos.

The occurrence of a marked increase of the transitional leukocytes on two occasions, while the patient was quite ill may have the same significance as the mononucleosis which is reported as part of the blood picture in lymphogranuloma inguinale.

The marked acceleration in the erythrocyte sedimentation test may also belong to the picture of lymphogranuloma inguinale, as this was observed in all of our patients with lymphogranuloma inguinale.

135 East Fiftieth Street.

Dr. Julius Klosterman and Mrs. Ruth W. Kidd of the Department of Bacteriology of the New York University gave valuable assistance in the preparation of antigens and in animal experimentation.

17. Buschke, A.: Dermat. Ztschr. **63**:267 (March) 1932.

18. Bory, L.: Le lymphogranuloma inguinale (ulcère simple adénogene des parties génitales), Progrès méd., Dec. 3, 1921, p. 565.

19. Koch, Franz: Experimentelle Untersuchungen ueber das Lymphogranuloma inguinale, Dermat. Ztschr. **65**:14 (Jan.) 1933.

DRUG ERUPTION

REACTION TO BISMUTH AND GOLD SALTS; REPORT OF A CASE

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The use of gold and bismuth salts is sometimes followed by the development of a toxic rash. In the case herein reported a rash which simulated both pityriasis rosea and erythema multiforme developed following the extended use of gold sodium thiosulphate and again following medication with bismuth salicylate.

History.—A well built man, aged 42, a window washer, was seen for lupus erythematosus which had been present for one year. He presented erythematous scaly patches that covered most of the face, neck, scalp and ears, an eruption so extensive that areas of normal skin were barely visible. The remainder of the body was free from lesions, and there were no systemic symptoms.

The past history and the family history were without significance. The general physical examination gave negative results. The Wassermann and the Kahn reactions of the blood, the urinalysis, and the blood pictures were normal. In the past he had been treated with numerous topical applications, and with several exposures to the roentgen rays.

Treatment.—He was given intravenous injections of gold sodium thiosulphate at intervals of one week. The first dose was 5 mg., and each succeeding dose was increased by 5 mg. until a maximum single dosage of 50 mg. was attained. After the eleventh injection his condition had improved sufficiently to allow rest from treatment for six weeks. The injections were then resumed, again beginning with a small dosage, until the eighth injection, when a pruritic rash appeared on the body, which consisted of scattered macular lesions symmetrically distributed on the trunk and limbs. In a few days many more lesions developed, and the appearance as a whole was that of pityriasis rosea in that the lesions were erythematous, oval, scaly and their long axes were parallel to the lines of cleavage of the skin. Gradually they became a darker red, the deeper layers of the skin became involved, and the dependent areas showed the greatest intensity. The clinical picture now was clearly one of toxic dermatitis of the erythema multiforme type. Microscopic examination of a lesion showed a nonspecific inflammatory reaction about the blood vessels consistent with the clinical diagnosis. The eruption cleared up rather promptly when sodium thiosulphate was administered intravenously, and when the body was entirely free from lesions skin tests were performed with weak dilutions of gold sodium thiosulphate. A patch test was negative after seventy-two hours, and remained negative. A scratch test was definitely positive. Control tests were negative, and intradermal tests were not performed.

After a rest period of several months, treatment was begun with intramuscular injections of bismuth salicylate at weekly intervals. After the seventh treatment there again developed a toxic rash similar in every respect to the dermatitis the patient had had previously. There was the same response to skin tests, and injec-

tions of sodium thiosulphate again effected a prompt cure. During neither attack was there a focal flare-up of the lupus erythematosus, and the systemic response each time was mild, consisting of slight malaise and a trace of albumin in the urine. The patient lost no time from his employment. The lupus erythematosis showed gradual but definite improvement.

COMMENT

It seemed to me desirable to record this reaction for almost every practitioner uses bismuth preparations and in recent years gold salts

Toxic eruption following injection of gold thiosulphate.

have attained considerable prominence. Dermatologists have long known that gold preparations are capable of causing toxic reactions and pityriasis rosea-like eruptions from it and from the use of bismuth have been noted.[1] However, the occurrence in one person of identical toxic reactions from both gold and bismuth salts is, so far as I can determine, unique. These reactions are not specific for gold or for bismuth prepara-

1. Skolnik, E. A., and Aleshire, I.: Skin Eruptions from Bismuth Therapy in Syphilis, J. A. M. A. **98**:1798 (May 21) 1932.

tions; they represent a group reaction that can be caused by heavy metals. Another explanation that has been offered is that the reaction after the use of the bismuth salicylate may have been due to the previous metallic treatment. According to Weiss, one irritant may leave for following irritants a greater capability of response; a second irritant, though of similar strength, may have an action greater than that of the first irritant; a series of individually inactive irritants can exert a toxic effect, a phenomenon that has been designated the summation of the irritants.[2]

7 West Madison Street.

2. Throne, B.; Kingsburg, J., and Myers, C. W.: Unusual Clinical Manifestations Following Intravenous Administration of Gold Compounds, Arch. Dermat. & Syph. **25**:494 (March) 1932.

PITYRIASIS ROSEA

REPORT OF CASE SHOWING A GIGANTIC HERALD PLAQUE WITH UNUSUAL MANIFESTATIONS

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Pityriasis rosea was first described by Gibert in 1860, but it was not until 1900 that its recognition as a distinct clinical entity became established. Since then, varying clinical features have been added so that at present the clinical criteria are so elastic that a diagnosis is much more often and more readily reached.

Widal [1] described a case of pityriasis rosea which lasted six months. Hallopeau reported a case in which the herald patch preceded the general eruption by two months. In the case described by Allen [2] the herald patch was gigantic; it occupied one-half the chest wall.

REPORT OF CASE

E. A., aged 63, born in Russia, was first seen on Feb. 10, 1933. Over the right scapular region he presented a lesion which had been present for four months. The lesion was sharply defined and was about the size of a small palm. It was composed of erythematous, raised, scaly, concentric rings. Between the elevated rings there were areas of clearing. In the center of the entire lesion there was a small pea-sized, senile keratotic lesion.

Two weeks later the lesion was larger and measured 13.5 by 6.25 cm. It retained the characteristics described. In addition, there was a similar, smaller, scaly lesion on the right side of the neck.

On March 17, it was noted that there were new lesions below the large lesion on the back (illustration). These were coin-sized, sharply marginated, erythematous, scaly lesions; some of them presented distinct fawn-colored and wrinkled centers. The lesions began to retrogress on April 2, and they completely disappeared about three weeks later.

The results of biopsy by Dr. Satenstein showed that the eruption was pityriasis rosea or a toxic process in the form of a drug eruption.

CONCLUSION

It will be noted that the duration of our case was six months, equal to the length of the one described by Widal. The herald patch

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1. Widal, E.: Ann. de dermat. et syph. **3**:22, 1882.
2. Allen: J. Cutan. Dis. **14**:356, 1896.

of the case we observed began about four or five months before the general eruption; this very much exceeded the time stated by Hallopeau in his report. The herald patch in our case was unusual in size,

Primitive patch with development of general eruption.

but it probably did not equal the dimensions of the one reported by Allen, nor, as far as we know, has the configuration here described been reported.

HYPERTROPHIC STRIAE DISTENSAE

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Striae distensae and striae gravidarum are so common and cause so little complaint that they are more or less taken for granted and regarded as normal.

Several factors have led to the belief that they are due to mechanical rupture of the elastic tissue framework of the skin or to its disorganization and thinning by increased tension: (1) their occurrence in association with rapid increase in body volume, whether due to obesity, growth, pregnancy, edema or tumor; (2) their direction, which is along the lines of cleavage of the skin and transverse to the line of greatest tension; (3) their occurrence in the areas in which the skin is delicate, and (4) their histologic structure. Certain exceptions must be explained, however, before one can accept this purely mechanical explanation for the appearance of these irregular linear areas of atrophy over the abdomen, buttocks and thighs, about the breasts and occasionally in other areas: 1. Their appearance during the course of wasting diseases associated with loss of body volume, such as typhoid, tuberculosis and Shiga-Kruse dysentery. (An attempt has been made to reconcile this exception by stating that the patient lies for long periods with the knees bent and back bowed, thus producing increased tension.) 2. The extraordinary variability in their appearance in different persons following pregnancy or obesity. 3. The appearance of striae in girls at puberty associated with no more than a normal increase of body volume.

Recent studies have made it likely that in certain cases at least the elastic tissue may have been predisposed to mechanical rupture, and that it may have been weakened by a specific elastic tissue toxin and made a *locus minoris resistentiae*. As long ago as 1892, Unna [1] found elacin, i. e., basophilic elastin, in striae distensae. He considered this evidence of a degenerative chemical change in the elastic tissue. Jadassohn [2] on several occasions expressed his belief in the presence of a specific elastotoxin produced at times by infection, and at other times by disturbances of the endocrine system, which renders the elastin more liable to rupture. In one case he demonstrated the imbibition of calcium by the elastic fibers and cited this as evidence of degenerative change.

Presidential address delivered at the annual meeting of the Chicago Dermatological Society, Jan. 18, 1933.

1. Unna, P. G.: Monatsh. f. prakt. Dermat. **19**:465, 1894.
2. Jadassohn, J.: Zentralbl. f. Haut- u. Geschlechtskr. **11**:286, 1924.

Brünauer [3] had the opportunity during the World War to observe the appearance of marked atrophic striae in two youths seriously ill with Shiga-Kruse dysentery. In one, there were transverse striae on the lower part of the back; in the other, they appeared on the flanks, the thighs and the knees. The course of the disease was short and fatal. The patients did not lie in cramped positions or long in one position. The tension of the skin was normal. Brünauer published his histopathologic studies from these cases in 1923. He found degenerative changes in the elastic tissue not only of the skin but of the blood vessels as well. He propounded the theory that a circulating toxin produced by the Shiga-Kruse bacillus had a specific affinity for elastic tissue and caused degenerative changes in the framework of the skin, which eventuated in stretching and atrophy following even normal tension of the skin. He ventured the assumption that similar elastotoxins may be produced by degenerative processes in other parts of the body or by disturbances of the endocrine system. He sought thus to reconcile the exceptions to a purely mechanical theory. Kogoj,[4] in 1925, found further support for Brünauer's theory of the presence of a circulating toxin with elastic tissue from his histologic study of marked striae which appeared in a youth 18 years old, dying of pulmonary tuberculosis, and also from his study of newly formed striae gravidarum.

My interest in this subject was aroused by a case seen in Dr. Ormsby's practice a few years ago.

REPORT OF CASES

Case 1.—A girl, aged 14, was brought for examination by her mother because raised welts had appeared over her hips and buttocks within a period of two and one-half months. They caused no sensation. The girl was well developed. She did not appear obese, but had gained 2 pounds (0.9 Kg.) a month for the preceding eighteen months. She weighed 125 pounds (56.7 Kg.) when first seen. She had enlargement of the thyroid gland during adolescence. Her menses were established two years previously, and she was normal in every other respect.

When first seen, raised, brownish-red, moderately firm welts were present over the buttocks and over the trochanters. These were arranged along the lines of cleavage. On pressure with a diascope the color disappeared, and the welts resembled ordinary striae. The raised welts connected with atrophic lines of the type of ordinary striae except that the color was more yellowish. On the inner surfaces of the thighs the lesions were more papular, and the papules were arranged along the lines of cleavage. During a period of several months' observation, the raised welts became transformed into atrophic striae.

Case 2.—During the past year another patient was seen with Dr. Ormsby. A girl, aged 15, had increased in weight from 100 to 123 pounds (45.4 to 55.8 Kg.) within nine months. During this period reddish lines developed on the buttocks and over the knees.

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3. Brünauer, S. P.: Arch. f. Dermat. u. Syph. **143**:110, 1923.
4. Kogoj, F.: Arch. f. Dermat. u. Syph. **149**:667, 1925.

The patient did not appear obese. She was well developed and normally nourished. Irregular striae radiated outward and upward from the nates, and were branched in places. Some of the striae were dull red and raised above the surrounding skin. Others were atrophic and glistening white. There were a few transverse striae above the knees.

CASE 3.—*History.*—A young woman, aged 16 years and 9 months, appeared at the outpatient service of the Cook County Hospital on April 4, 1932, for an eruption on the dorsa of the hands and wrists of a few days' duration. This proved to be an involuting erythema multiforme. During the examination, raised welts and striae were noticed on the hips and flanks, and she was admitted to the hospital.

She stated that the striae were first noticed when she was 10 years old, that she had gained rapidly in weight, that the striae had increased gradually during the past two years, and at first were red and raised above the surface of the skin, but caused no sensation. She had had the usual diseases of childhood. When 8 years old she fell off a bridge, injuring her abdomen. Following this accident she had a convulsion, and in the succeeding few weeks several others occurred. Since then she has had no more convulsions but has had severe frontal headaches from time to time for three years, and is subject to crying spells and fits of anger. She is very nervous. Her menses first appeared at 10 years of age. She had two periods, and then there was a cessation of the menses until she was 15 years of age. She started to gain weight rapidly when the menses ceased and is the only obese member of the entire family. Since 15 years of age she has menstruated irregularly, being regular for two or three months and missing three or four months. Her last menses were on Jan. 4, 1932. The flow is scanty, lasts only two days and is painful.

Family History.—The father was killed accidentally. The mother died following childbirth. She had convulsions during the last pregnancy. Neither the mother nor the father was obese. There were four sisters and five brothers, all dead. No accurate history was obtained as to the causes of death.

Examination.—The patient was obese, measuring 5 feet, 2 inches (157.5 cm.) in height and weighing 230 pounds (104.3 Kg.). The growth of hair was normal. Fat was most marked over the abdomen, which was pendulous. General examination gave negative results, except for some tenderness over the tubo-ovarian regions. A roentgenogram of the sella turcica was negative. Urinalysis gave negative results, and the Wassermann reaction of the blood was negative. The blood pressure was 120 systolic and 80 diastolic. Chemical examination of the blood showed: urea nitrogen, 17.5 mg.; sugar, 85 mg., and cholesterol, 166 mg. per hundred cubic centimeters of blood. The basal metabolic rate was minus 15.

Special Examination of the Skin.—There was a fading eruption of the multiforme erythema type on the backs of the hands and wrists. There were irregular, roughly parallel lines, many of which were violaceous or bluish red, definitely infiltrated and raised above the surface of the surrounding skin, radiating downward and outward from the flanks across the hips and buttocks. They averaged 4 mm. in width and varied in length from 5 to 10 cm. Some were branched. In the same area a few of the lines were pale, atrophic and depressed. On the anterior and posterior axillary folds and over the breasts atrophic striae were present. Raised bluish-red lines of the type just described radiated from the pubic area into the groin and upward toward the flanks. A biopsy specimen was taken from a raised infiltrated line in the right flank. Part of the specimen was fixed in alcohol and part in a dilute solution of formaldehyde.

The patient was soon discharged, but was readmitted to the Cook County Hospital on three subsequent occasions: on May 24, 1932, for a threatened abortion, at which time it was determined that she was pregnant; on June 22, for epileptiform convulsions, and on her last admission, November 21, when a healthy boy was delivered.

She came under our observation again in the outpatient department on December 23. Her weight was 240 pounds (108.8 Kg.), but she stated that she weighed 258 pounds (117 Kg.) during her pregnancy. Many new red lines had appeared on the abdomen, a few over the hips and a few in other areas. A marked chloasma was present on her face. The original raised lines described on

Fig. 1 (case 3).—Cross-section of a raised stria from the flank. The early stage shows: edema of the papillary and reticular layers of the corium where the collagenous fibers are seen to be parallel to the surface of the skin, and the connective tissue cells are increased in size and number; a perivascular round cell infiltrate about the superficial vessels; a disturbance of the collagenous bundles in the middle corium. Hematoxylin and eosin; × 45.

her first visit had flattened out and become depressed. They were a deep red. Similar depressed, deep red striae were present on the abdomen. A moderate number had appeared on the inner part of the thighs, the popliteal folds, beneath the breasts and on the medial and posterior aspects of the upper part of the arms and over the sacrum. Over the abdomen these atrophic striae were marked and were from 6 to 8 mm. wide. A biopsy specimen was taken from a small stria in the right flank near the scar of the original biopsy specimen. The tissue was fixed in alcohol and mounted in paraffin. A second biopsy specimen was taken

from a raised stria in the region of the right flank, and the tissue was fixed in alcohol and in a dilute solution of formaldehyde. In addition to staining the tissue with hematoxylin and eosin, the Unna-Tänzer orcein method for elastin and Hart's modification of Weigert's method were used. Elacin was sought by Unna's method, polychrome methylthionine chloride U. S. P. (methylene blue) and tannin being used.

On examination of a section stained with hematoxylin and eosin, under low power magnification, the area of the stria cut in cross-section was seen to be raised above the surrounding skin (fig. 1). The epidermis was little changed.

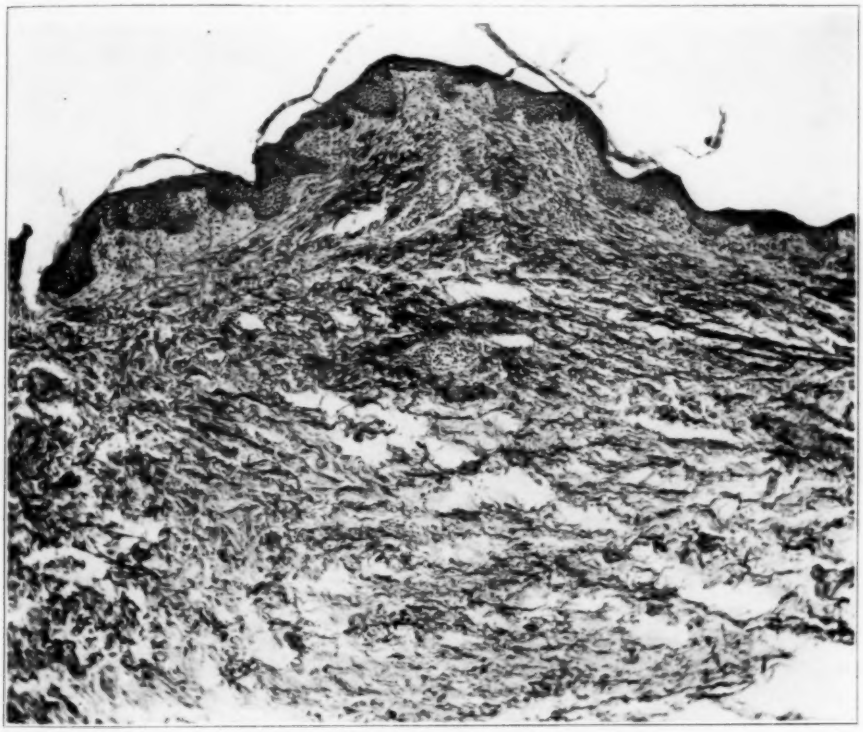

Fig. 2 (case 3).—Same area as figure 1 stained with Hart's modification of Weigert's elastic tissue stain and hematoxylin. A cross-section of zone of the elastic tissue defect is shown. Elastin fibers have been transformed into numerous faintly staining fibrillae which in the upper corium run parallel to the surface of the skin; × 53.

In the reticular layer of the corium the vessels were dilated, and there was a slight perivascular infiltrate that was most marked in the region of the stria. The stria was plainly distinguished from the surrounding skin because its reticular layer was made up of large numbers of wavy collagenous fibers running parallel to the surface of the skin and by an increase in size and number of the connective tissue cells as well as by a slight edema. The collagenous bundles in the middle third of the corium in the zone of the stria were also separated and distorted.

Sections stained with acid orcein and Hart's modification of Weigert's stain for elastic tissue were next studied. In the center of the section (fig. 2), in the raised area corresponding to the stria, was a zone of marked disturbance in the elastic tissue extending from the papillary layer through the upper two thirds of the corium, and becoming wider in the middle of the corium. In the affected portion the normal arrangement of the elastic fibers in the papillary and subpapillary zones as seen at the margin was replaced by a multitude of fine fibrils running parallel to the surface, with no supporting network for the papillae. In the lower reticular layer one got the impression that these fine fibrillae were formed by the fraying out of elastic fibers of normal size. In the middle third

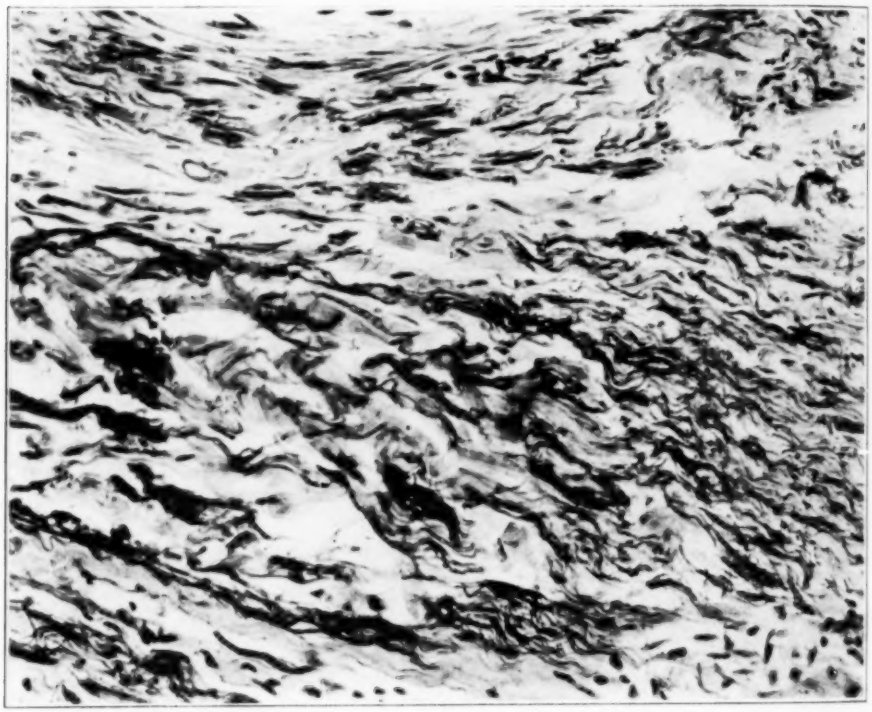

Fig. 3 (case 3).—Same as figure 2; × 300. Hart-Weigert elastic tissue stain and hematoxylin. A transition of normal elastic fibers into fine, faintly staining fibrillae is shown at the lateral margin of the zone of elastic tissue defect.

of the corium the zone of elastin defect was perhaps twice as wide as in the reticular layer and was limited laterally and below by normal elastic tissue. It was made up of fine, frayed, poorly staining, fragmented fibers with no regular arrangement. The fibrillae were not so regular and not nearly so numerous as in the upper part of the corium, and fibers of normal size could be seen splitting into a dozen or more fibrillae. The transition at the lateral margins of this zone to normal elastic tissue was gradual (fig. 3). Groups of fine fibrillae alternated with elastic fibers of normal size and arrangement and other fibers that were dense and clumped. Fibrils giving Unna's stain for collagen were demonstrated only in the upper part and in the middle third of the zone of defect, but elacin was not demonstrated.

The second biopsy specimen was taken about ten months later than the first from a small, dull red, depressed, atrophic stria about 6 cm. from the scar of the first specimen. It was fixed and stained in the same way as for the first biopsy.

The zone of elastic tissue defect was much more complete than in the first specimen (fig. 4). It was of the same general shape, broadest below and narrowest in the subpapillary zone, and extended through two thirds of the corium. In this area only a few fine, short fibrils of elastin, rather weakly staining, remained irregularly scattered, except in the subpapillary layer where these fibrillae lay parallel to the surface. The transition into normal elastic tissue at the lateral borders of the zone of defect was more abrupt than in the first biopsy specimen, and there were a few tightly coiled and clumped fibers of elastic tissue at the border interspersed with the very fine, poorly staining fibrillae.

With other stains the area of defect was difficult to locate in contradiction to the first specimen. There was no evidence of productive inflammation, although the vessels were all well defined. Elacin and collagen could not be demonstrated.

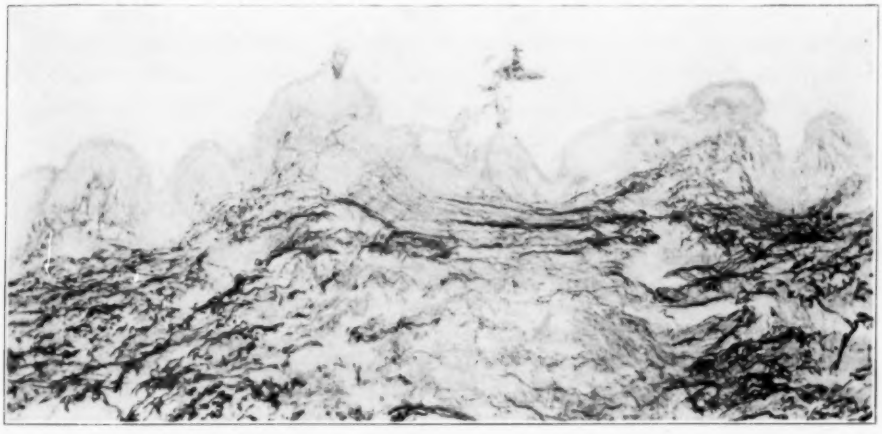

Fig. 4 (case 3).—Second biopsy specimen showing late atrophic stage of stria, with a marked elastic tissue defect in the midcorium. A few fine fibrillae are retained in the papillary and subpapillary zones. Hart-Weigert; × 45.

COMMENT

The presence of raised violaceous welts, which in the course of a few weeks were observed transformed into depressed atrophic striae of the usual type, made it appear more than likely that in such cases at least a factor other than mere mechanical tension was active. The histopathologic changes appear to support such a belief. Wirz,[5] who in 1930 described a similar transformation of raised welts into atrophic striae in a young pregnant woman, is of the same opinion.

Brünauer [3] and Kogoj,[4] in describing the histopathology of atrophic striae, could find no evidence of inflammatory reaction and were inclined to agree with Zieler [6] that the slight round cell infiltrate about the vessels

5. Wirz, F.: Arch. f. Dermat. u. Syph. **159**:124, 1930.
6. Zieler: München. med. Wchnschr. **52**:1764, 1905

of the cutis is due to the stimulus of stretching. Eliascheff,[7] however, found a marked round cell infiltrate about the vessels of the corium in newly formed striae which were associated with empyema. In our case 3, the histopathologic study of an early welt confirmed the clinical impression of inflammation. The epidermis in the region of the stria bulged outward. The collagen was somewhat edematous, and the connective tissue nuclei were much larger and more numerous than normal. The vessels were moderately dilated. There was a slight perivascular infiltrate of polymorphonuclear leukocytes and lymphocytes, more marked in the region of the stria. All this confirmed the impression that the process was a productive one.

A glance at the sections from this early lesion stained with acid orcein and Weigert's stain for elastic tissue was enough to show that there had been marked change in the elastic framework of the skin. The normal elastic tissue framework of the papillary and reticular layers had been supplanted by a multitude of fine, rather poorly staining fibrillae lying parallel to the surface of the skin. Pinkus [8] stated that the normal elastic tissue consists of fibers but not of bundles of fibrillae. Evidently this transformation was a degenerative one. The arrangement of these fibrillae parallel to the surface was evidence that they were no longer able to resist the normal tension of the skin. In the midcutis there was the same evidence of degeneration but no regularity in arrangement. Fibrillae of this type were described by Wirz [5] as occurring in the raised welts in a pregnant woman, but he did not emphasize their arrangement.

This fibrillation of elastic fibers seems to be an early stage in the evolution of the stria, for it was mentioned only incidentally by Brünauer [3] and Kogoj [4] and was present only in the subpapillary zone and in limited amounts in the late atrophic stage of our own case. Unna [9] described it in small atrophic striae, but does not state whether he believed it due purely to mechanical tension or to chemical change. Zieler [6] considered it an evidence of regeneration of elastin.

The transformation from degenerated to normal elastic tissue at the margins of the stria is gradual. There is no evidence of spiral or rolled up fibers suggesting the retraction, like a spring, of fibers which have been snapped by the tension, as the early authors, Unna,[9] Zieler [6] and co-workers, including Brünauer [3] have described, but which Kogoj [4] considered an artefact.

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7. Eliascheff, P.: Ann. de dermat. et syph. **5**:355, 1924.

8. Pinkus, F., in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1927, vol. 1, pp. 1 and 33.

9. Unna, P. G.: The Histopathology of the Diseases of the Skin, translated by Norman Walker, Edinburgh, W. F. Clay 1896, p. 997.

Unna [1] coined the term "elacin" for basophilic elastin and described several methods for demonstrating it. The one most favored by later students is his polychrome methylthionine chloride tannin method. Like Wirz,[5] we were unable to demonstrate elacin in the early welts. However, we did demonstrate collacin or basophilic collagenous fibers in the area of defect. Kogoj [4] considered collacin of the same significance as elacin, i. e., an evidence of degenerative chemical change.

The collagen was also much altered in the early stage of the stria. In the reticular layer there were numerous wavy fibrillae running parallel to the surface which stained rather poorly and were somewhat homogenized. Deeper in the corium there was also some disturbance in its arrangement and its staining properties. Similar alteration of the collagen has been described by Brünauer [3] and Kogoj [4] in the atrophic stria. The demonstration of collagen was evidence of chemical change. The involvement of the collagen was significant in view of Kyrle's [10] belief that in atrophy of the skin collagenous degeneration must always be associated with degeneration of the elastic tissue before it is clinically visible. It is evident that at this early edematous stage of the striae there is a chemically and physically altered supporting framework of the skin.

The second biopsy specimen taken from a depressed atrophic stria nearly a year later gave an insight into the end-result of these biochemical processes. There was an almost complete defect in the elastic tissue extending from the papillary layer to the lower third of the cutis. Only a few free, fine, poorly staining remnants of elastin remained except in the subpapillary layer where there was still some suggestion of the parallel fibrillae. The collagen showed little change. There was no atrophy of the appendages of the skin but some deformation owing to lack of supporting framework. Kogoj [4] described a similar condition. The zone of defect was narrowest in the papillary and subpapillary layers. Unna [9] explained this on the ground that elastic network in this area is normally capable of considerable give.

Can mechanical tension alone produce the changes in the elastic fibers which have been demonstrated in the early hypertrophic striae in case 3? It seems plausible that the transformation of elastin fibers of normal size into numerous very fine, long drawn out fibrillae is an indication of more than a mechanical deformation, and rather good evidence of a degenerative process. These fibrillae no longer possess the resistance of normal elastin to transverse strain, and this accounts for their arrangement parallel to the surface and to the consequent distortion of the blood vessels and appendages of the skin. The somewhat swollen and dis-

10. Kyrle, Josef: Vorlesungen über Histo-Biologie der menschlichen Haut und ihrer Erkrankungen, Berlin, Julius Springer, 1925, vol. 1, p. 125.

torted elastic fibers at the margin of the elastic tissue defect may be seen in other conditions with atrophy of the elastic tissue and are evidence of degeneration rather than elastic fibers that have snapped and coiled up like a broken spring.

In the later stage this degenerated and fibrillar elastin had been largely absorbed in the area, and interpretation of the processes involved would be difficult without knowledge of the early stage.

It would seem likely, then, that a toxic factor may be assumed to affect the elastic tissue and render its separation more likely when the tension is increased. Why it should affect roughly parallel lines and certain locations is more difficult to explain. There are indications of a disturbance of the endocrine system in the third patient, and the appearance of similar lesions at puberty in the two patients first cited would seem to encourage the speculation, at least, that substances with selective toxicity for elastic tissue may be produced under some circumstances of endocrine imbalance, predisposing to the production of raised striae which later become atrophic.

SUMMARY

1. Three cases have been described of an early hypertrophic stage in the production of striae distensae in girls shortly after puberty.

2. One of these cases was studied histologically in the early stage and in the later atrophic stage of the striae.

3. There was evidence in the early stage of productive inflammatory change with degeneration of the elastin.

4. The explanation of the appearance of such striae involves not only an increase of mechanical tension in the skin but degeneration of the elastic tissue by some toxic agent.

5. The theory is propounded that the toxic agent in these cases may be the product of a disturbance of the endocrine system.

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DISCUSSION

DR. HAMILTON MONTGOMERY: Dr. Ebert is to be congratulated on his detailed histopathologic study. The fine fibers which are seen in the photomicrographs may possibly be regenerating rather than degenerating elastic tissue fibers. Gans calls attention to new formation of elastic fibers in a certain type of diffuse scleroderma, and I believe a similar process can occur in striae cutis distensae. One can look on the curling up of the fibers at the margins of the process as the result of mechanical breaking, and then on the fine brushlike fibers as newly formed elastic tissue that is endeavoring to stretch over the pathologic area in a process of repair. There is considerable doubt, however, whether elastic fibers can regenerate. Dr. Ebert has brought out clearly the toxic element in striae cutis distensae.

DR. WILLIAM ALLEN PUSEY: It seems to me, if one wishes to speculate, that one must assume that there is a mechanical factor in the vast majority of these cases of striae. I do not say that a toxemia may not be the sole cause as in cases of typhoid fever, but in cases with distention in which mechanical fracture of the fibers may be the primary factor one must consider whether this toxic degeneration is not a result of breaking up of the tissues—that all of these changes may be the result of digestive substances freed as the result of injury to the tissues, so that in these cases, at least, the mechanical cause is the primary factor. That idea occurred to me simply because the digestitve factors can have the phenomena seen in many of these cases.

DR. RUBEN NOMLAND: I studied these sections, and I think that they show better than the photomicrographs that no simple theory of stretching and then breaking could properly explain these phenomena. In regard to the brushlike fibers, they occur in the most recent lesions, the small striae not more than 1 mm. wide which were not elevated and which were assumed to be of recent origin, and not the old striae that would give opportunity for degeneration. There would have to be degeneration before there could be fully developed striae. I think, as Dr. Ebert showed, that the factors in the breaking up of the fibers are toxic action plus stretching to produce the striae.

DR. HAMILTON MONTGOMERY: I have seen the fine fibers and brushlike fibers in old cases of striae cutis distensae.

DR. OLIVER S. ORMSBY: I was much interested when I saw these hypertrophic lesions in linear arrangement in adolescent girls, because these were the first cases I had observed with this particular type. There are a number of cases on record in which macular lesions have started as hypertrophic forms, and in those trauma or tension was probably not a factor in the production of the lesions.

DR. M. H. EBERT: I followed in Dr. Michelson's footsteps and selected a very simple subject for this paper. I am glad I did. I think that in the future I shall adhere to simple subjects for it has been a revelation to see how much can be developed and how much real thought is necessary to get anywhere. It is astonishing to see how much has been written on this subject of striae, particularly regarding the elastic fibers. Zieler discussed the question of fibrillation of the elastic tissue. In early striae gravidarum he found this form of elastic tissue in the papular layer, and he discussed the possibility of its being a manifestation of regeneration. In my cases in which the fibrillation was so marked in the upper corium, I could hardly bring myself to think that it was an evidence of regeneration.

As to Dr. Pusey's point, I have to confess that I spent a lot of time in thinking this over. It was my impression that some change had taken place in the elastic tissue before it snapped and gave way.

I thought that a study of this unusual hypertrophic stage of striae cutis distensae might throw light on the genesis of the common forms of atrophic striae.

FUNGICIDAL PROPERTIES OF CERTAIN CLINICALLY RECOGNIZED FUNGICIDES

LABORATORY DETERMINATIONS USING THE STRICKLER-BORNEMAN APPARATUS AND THE HENAL VACUUM VAPORIZER

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The object of this study was the development of a formula for the local treatment of epidermophytosis based on laboratory facts. This seemed desirable for a number of reasons: the continued numerical increase of epidermophytosis; the realization by the laity of the harmful possibilities of this condition, if it is neglected, and the need for a topical medicament sufficiently fungistatic to be relied on as the sole agent in the treatment of the mildest expressions of this condition and as an adjunct in the more severe forms.

It was decided to build this formula with iodine as the basis, since chemotherapeutic studies have shown iodine to be the best present-day fungicide. A liquid was believed to be superior to an ointment, principally because of the more efficient action of the iodine, since Sollmann has stated that the iodine in ointments through chemical union with the bases, is unable to react with proteins and that, therefore, iodine in such combinations must lose at least a part of its effectiveness. Other factors favoring a liquid combination were cleanliness, ease of application, improbability of decomposition of the remedial agent by heat or moisture, even when applied to a soggy skin, and therefore less tendency toward irritation.

PLAN AND TECHNIC OF EXPERIMENTS

In the experiments described, an effort was made to determine what remedies, aside from iodine, having an experimental or empiric basis as fungicides, could be combined with iodine to increase its efficiency. In this investigation, the technic followed was that devised for testing the fungicidal properties of vaporized iodine.[1] The substances tested were: potassium iodide, 10 per cent, in talc; salicylic acid, 3 and 10 per cent respectively, in talc; benzoic acid, 10 and 20 per cent respectively, in talc; boric acid, and talc alone as the control.

In these experiments, collodion sacs were used, the outer surfaces of which were covered with the respective powders for two hours and removed with care so as to make possible a maximum adherence of the powder. The sacs were then

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1. Strickler, Albert: Elemental Iodine; A New Technic for the Evaluation of Its Fungicidal Properties, J. Lab. & Clin. Med. **18**:49 (Oct.) 1932.

filled with 5 cc. of the liquid culture growth (ringworm fungus culture), hermetically sealed and suspended in the Strickler-Borneman apparatus. Each sac was subjected to two applications of vaporized iodine as delivered by the Henal vacuum vaporizer, with a negative pressure of 15 inches (38.1 cm.). The sacs were exposed to the vaporized iodine for fifteen, thirty and sixty minutes, respectively, before reculture. After removal of the collodion sacs from the apparatus, a definite amount of the iodine-treated culture was pipetted onto the solid Pennsylvania medium for observance of growth. All cultures were observed for twenty-one days before being discarded. The types of ringworm fungi used in these experiments were Microsporon audouini, Trichophyton gypseum asteroides and Epidermophyton inguinale. These fungi were grown on Weidman's Pennsylvania medium for from two to four weeks and were transplanted on the same medium without the agar for enclosure in the collodion sacs, prior to experimentation.

REMEDIAL AGENTS USED

Potassium Iodide, 10 Per Cent, in Talc.—Potassium iodide was selected because of the suggestive observation of Sharlit and Highman that the addition of iodides seemed to increase the efficiency of tetraiodomethenamine, the iodine compound which they used, both experimentally and clinically. The potassium iodide mixture was subjected to the fungicidal tests already outlined, with the following results: Vaporized iodine alone retarded the growth of Microsporon audouini after thirty minutes of exposure. However, the addition of the potassium iodide appeared to enhance the fungicidal properties of the vaporized iodine to such an extent as to kill this fungus after exposure for the same interval. Vaporized iodine alone and when fortified by the potassium iodide proved equally lethal for the culture of Trichophyton gypseum-asteroides. However, potassium iodide-fortified vaporized iodine appeared to be more deadly for Epidermophyton inguinale, which survived exposure for fifteen minutes to the vaporized iodine alone and was killed when exposed to the fortified vapor for the same interval.

Salicylic Acid, 3 and 10 Per Cent Respectively, in Talc.—Since salicylic and benzoic acid form the basis of the clinically reliable Whitfield's ointment, these remedies were tested experimentally. Schamberg and Kolmer, in their chemotherapeutic studies, used an aqueous dilution of salicylic acid (1:100) and found salicylic acid lacking in fungistatic properties, even when used in a dilution of 1:20. Kingery and Adkisson used a 1:1,000 aqueous dilution of salicylic acid and found that one minute of exposure of various fungi to this solution resulted in a fungicide rate of 29 per cent; exposure for thirty and sixty minutes, respectively, resulted in a rate of 64 per cent; while exposure of twenty-four hours showed a rate of 93 per cent.

Sharlit and Muskatblit elaborated a novel technic, using a 1 per cent concentration of salicylic acid in flexible collodion and lining the inside of the test tube with this preparation. After this had dried, 10 cc. of

Sabouraud's dextrose agar was poured into the tube and permitted to solidify in a slant. The center of the slant was seeded with cultures of various types of ringworm fungi, and the tube was then plugged and incubated at room temperature. Their results with salicylic acid showed that this medicament killed the growth of Microsporon lanosum, Epidermophyton inguinale, Epidermophyton gypseum and Achorion quinckeanum.

Following are the results obtained with salicylic acid by the method used in this study. With a 3 per cent dilution of salicylic acid, the culture of Trichophyton asteroides grew slightly slower than the control after exposure for fifteen minutes to vaporized iodine; the culture of Epidermophyton inguinale equaled the control in growth, and the growth of Microsporon audouini was slightly slower than that of the control. During the thirty and sixty minute exposures no growth appeared in any of the tubes. Ten per cent salicylic acid gave less favorable results than did 3 per cent. In the tubes exposed for fifteen and thirty minutes respectively, the growth was equal to that of the control, while in the tubes exposed for sixty minutes no growth appeared.

Benzoic Acid, 10 and 20 Per Cent Respectively, in Talc.—Benzoic acid, the other constituent of Whitfield's ointment, was also tested for its fungicidal properties. According to Schamberg and Kolmer, benzoic acid in a 1 : 100 aqueous dilution proved fungistatic in a strength of from 1 : 40 to 1 : 200, depending on the type of fungus used. Kingery and Adkison used a 1 : 1,000 aqueous dilution and found that various fungi exposed to this dilution for one minute were not killed. When the fungi were exposed for thirty and sixty minutes, respectively, the fungicidal rate was 50 per cent, and after exposure for twenty-four hours the fungicidal rate rose to 80 per cent. Sharlit and Muskatblit, using their special technic, showed that benzoic acid killed the growth of the various cultures of ringworm fungi.

Gould and Carter studied the effect of the combination of salicylic acid and benzoic acid on a number of the common types of ringworm fungi. The technic used was similar to that of Schamberg and Kolmer. Their results indicated fungistatic powers for these two acids in combination, even in such dilute solutions as 1 : 10,000 for salicylic acid and 1 : 5,000 for benzoic acid.

Exposure of cultures of Trichophyton asteroides, Epidermophyton inguinale and Microsporon audouini for fifteen minutes to vaporized iodine fortified by 10 per cent benzoic acid in talc failed to cause any inhibition in growth, as compared with the control. The growth of the cultures exposed for thirty minutes also equaled that of the controls, while the cultures exposed for sixty minutes showed no growth. The use of 20 per cent benzoic acid in tubes exposed for fifteen minutes resulted in a growth equal to that of the control cultures, while all the

cultures exposed for thirty minutes showed absence of growth, except those of Epidermophyton inguinale, in which, however, the growth was quite slow, indicating some inhibition. All the cultures exposed for sixty minutes showed complete absence of growth.

Boric Acid.—Boric acid has been suggested by McKee, Williams and others as of value in the treatment of epidermophytosis. Sharlit and Muskatblit, in their chemotherapeutic studies, found boric acid in a 1 per cent concentration in flexible collodion to possess the power of delaying the growth of certain common ringworm fungi. In the present investigation, boric acid caused a slight retardation of growth in the ringworm cultures used, particularly in those of Trichophyton asteroides.

Talc.—This substance was used as the carrier for the medicinal agents employed in this investigation. The talc-covered sacs containing cultures of the various ringworm fungi, after exposure to vaporized iodine for fifteen, thirty and sixty minutes respectively, yielded the following results: In the cultures of Epidermophyton inguinale and Microsporon audouini, the growths were comparable to those of the controls, indicating complete absence of any inhibition of growth. The culture of Trichophyton asteroides alone showed absence of growth after exposure for sixty minutes.

CONCLUSIONS

These experiments would seem to justify the following conclusions:

1. Potassium iodide appears to possess the property of enhancing the fungicidal power of vaporized iodine to a considerable degree.

2. A 3 per cent dilution of salicylic acid and a 20 per cent dilution of benzoic acid seem capable of increasing the fungicidal properties of vaporized iodine to a slight degree.

3. Boric acid was found capable of assisting vaporized iodine very slightly.

4. The control experiment with talc alone seemed to show that this substance does not possess any fungicidal or fungistatic properties per se. However, it may act as an additional barrier, and it may be prudent in future chemotherapeutic investigations to use this or some other inert powder so as to more closely simulate experimentally the non-penetrating mechanism of the human stratum corneum.

5. Until a standard technic for fungicidal tests is adopted, it will be difficult to compare the results of various investigators. The technic of Sharlit and Muskatblit and that which I used closely approached the actual conditions encountered in medical practice, for consideration is given to the impenetrability of the stratum corneum. This factor is

important in any attempt to apply laboratory findings to clinical work with the hope of comparable results.

6. The following local application for epidermophytosis is proposed, based on the laboratory fungicidal tests carried out under my guidance in the research laboratories of the Skin and Cancer Hospital of Philadelphia, and used for a number of months in the dermatologic clinic of that institution. Up to date, few evidences of the mildest form of irritation have been noted. The formula is:

	Gm. or Cc.
Iodine crystals	1.3
Potassium iodide	1.9
Salicylic acid	1.9
Boric acid	3.8
Alcohol, 50% to make	59.1

This preparation is a brown liquid, and is applied as a paint once or twice a day.

NOTE.—Renewed interest in various volatile oils as fungicides has prompted me to undertake additional studies. Pine oil, suggested by Smyth and Smyth, is now being investigated, with the view of adding it to the iodine combination already described. It is proposed to investigate other volatile oils which are capable of combination with iodine

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PRESENCE OF ARSENIC IN BISMUTH PREPARATIONS

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Unpublished rumors that certain patients presented symptoms of arsenic poisoning during treatment with bismuth preparations led to the investigation the results of which are reported herewith. Eleven bismuth preparations used for the treatment of syphilis were obtained from

Amount of Arsenic in Preparations Tested

Number	Preparation	Sample	Arsenic Content, per Cent
1	Bismuth metal (Burroughs, Wellcome and Co., Inc.)	a	0.000014
		b	0.000330
		c	0.000000
2	Bismuth sodium tartrate (G. D. Searle & Co.)	a	0.000108
		b	0.000370
3	Thio-bismol (Parke, Davis & Co.)	a	0.000000
		b	0.000150
4	Bismoid (colloidal bismuth metal) (Eli Lilly & Co.)	a	0.000000
		b	0.000330
		c	0.000000
5	Tartro-quiniobine (Spicer & Co.)	a	0.000050
		b	0.000140
6	Bismuth salicylate in oil (Eli Lilly & Co.)	a	0.000100
7	Bismuth salicylate in oil (Parke, Davis & Co.)	a	0.000170
8	Mesurol (Winthrop Chemical Co., Inc.)	a	0.000000
		b	0.000130
9	Quiniobine (Spicer & Co.)	a	0.000000
		b	0.000000
10	Oleo-bi-Roche (Hoffman-La Roche, Inc.)	a	0.000000
		b	0.000590
11	Potassium bismuth tartrate with butyn-D. R. L. (Abbott Laboratories)	a	0.000000
		b	0.000000
		c	0.000000
		d	0.000150

the respective manufacturers and distributors. A number of concerns sent a sample of each of from two to four lots, so that in all twenty-four samples were tested.

Each sample was digested with nitric acid and sulphuric acid and then tested by the standard Bragg-Gutzeit method for arsenic.

It is apparent from the table that no preparation contained an amount of arsenic sufficient to cause symptoms. Different lots of the same preparation varied in their arsenic content. This is noteworthy,

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and suggests the importance of the manufacturer's testing each lot of the drug before placing it on the market. It is conceivable that without such a test samples may be dispensed which contain significant quantities of arsenic.

After this work was completed, a note by Lowenburg and Naide [1] appeared, reporting the absence of arsenic from a sample of thiobismol.

1. Lowenburg, H., and Naide, M.: Arsenic Poisoning Caused by a Mouth-wash Containing Solution of Potassium Arsenite, J. A. M. A. **100**:737 (March 11) 1933.

ATTEMPTED IMMUNIZATION OF RABBITS AGAINST EXPERIMENTAL SYPHILIS

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In his excellent monograph on immunity in syphilis, Chesney [1] cited the more important attempts made prior to 1927 to produce an artificial active immunity against experimental syphilis in rabbits. In general, the procedures employed proved to be unsuccessful in creating even a partial immunity to subsequent inoculation with virulent Spirochaetae pallidae. Since 1927 further efforts to immunize rabbits against experimental syphilis have been reported. Thus Honda [2] obtained no evidence of immunity in rabbits as the result of repeated injections of a phenolized virus emulsion prepared from syphilitic testes. Pearce [3] found that experimental syphilis was less severe in rabbits rendered immune to the virus of vaccinia. Kolmer [4] obtained entirely negative results with phenolized and formaldehydized vaccines prepared from the syphilitic testes of rabbits. Schöbl, Tanabe and Miyao [5] reported that in rabbits treated with yaws vaccine local lesions failed to develop at the site of subsequent inoculation with Spirochaeta pallida, but the animals did become infected, as shown by the presence of Spirochaeta pallida in the regional lymph nodes. Klauder [6] found no immunity to experimental syphilis in rabbits as a result of injections of an alcoholic extract of syphilitic testes suspended in diluted hog serum or of injections of cholesterolized, diluted hog serum. Tatsumi [7] reported that the intratesticular injection of an extract of syphilitic testes produced a local immunity against the development of orchitis subsequent to the inoculation of virulent Spirochaetae pallidae. Vaisman and Hornus,[8] however, repeated his work but were unable to corroborate his findings.

From the Department of Physiology and Pharmacology, University of Louisville School of Medicine.

1. Chesney, A. M.: Immunity in Syphilis, Baltimore, Williams & Wilkins Company, 1927, p. 42.
2. Honda, M.: Acta dermat. **12**:179, 1928.
3. Pearce, L.: J. Exper. Med. **48**:125, 1928.
4. Kolmer, J. A.: Am. J. Syph. **14**:236, 1930.
5. Schöbl, O.; Tanabe, B., and Miyao, I.: Philippine J. Sc. **42**:219, 1930.
6. Klauder, J. V.: The Humoral Aspects of Immunity to Syphilis, Arch. Dermat. & Syph. **23**:884 (May) 1931.
7. Tatsumi, K.: Lues, Bull. Soc. japon. de syph. **8**:1, 1932.
8. Vaisman, A., and Hornus, G.: Compt. rend. Soc. de biol. **113**:63, 1933.

In the various attempts to produce an artificial active immunity against experimental syphilis in rabbits by means of extracts prepared from syphilitic rabbit testes, the maximum immunizing period has been one hundred and twenty-eight days, and the maximum number of injections of killed virus emulsion has been twenty.[2] In the actively infected rabbit, however, an interval of ninety days is necessary for the development of a practically complete immunity to an intratesticular reinfection with the homologous strain of Spirochaeta pallida subsequent to curative doses of one of the arsphenamines.[9] The previous failures to produce evidence of active immunity by the injection of killed virus emulsions prepared from syphilitic testes might conceivably in part, at least, have been due to the comparative brevity of the periods of attempted immunization. The present study was therefore undertaken with the object of eliminating more definitely the shortness of the immunizing period as a factor responsible for the essentially negative results thus far reported.

METHOD

An extract of rabbit testes infected with the Nichols strain of Spirochaeta pallida was employed in the attempted immunization. The extract, which will hereafter be referred to as organic luetin, was prepared according to the method described by Kolmer and Tuft.[10] Organic luetin is essentially a phenolized (0.5 per cent) suspension of testicular tissue and dead spirochetes in a physiologic solution of sodium chloride. It is heated at 60 C. for one hour, incubated at 37 C. for twenty-four hours, cultured for contaminating organisms and subsequently kept at icebox temperature. The organic luetin used in this study contained from 5 to 6 dead Spirochaetae pallidae per dark field. A luetin control extract was prepared in the same manner from normal rabbit testes.

Each of fourteen male rabbits was given a total of sixty-five injections of 1 cc. of organic luetin at four day intervals, and a control group of eight animals received similar treatment with the luetin control extract. In one half of the rabbits in each group the injections were made into the right testis, and in the others, subcutaneously into the dorsolumbar region. The period of attempted immunization was, therefore, two hundred and sixty days. During this interval the animals were examined clinically at the time of each injection and serologically by means of the Wassermann test[11] once a month. Four days after the last injection, all of the rabbits, together with four untreated controls, were inoculated in the right testis with a suspension of living Spirochaetae pallidae (Nichols strain). In the light of our present knowledge, the experimental conditions were optimum for the demonstration of any possible local or general immunity which may have been produced by the immunizing process. Thus, the immunizing period was long, the same strain of organism was used for both immunizing and infecting purposes, and the inoculation of the virulent spirochetes was made intratesticularly.[9] Subse-

9. Chesney, A. M.: Am. J. Syph. **14**:289, 1930.

10. Kolmer, J. A., and Tuft, L.: Am. J. Syph. **14**:241, 1930.

11. The Wassermann tests were made by the Serological Laboratory of the Wisconsin Psychiatric Institute, Madison, Wis., through the courtesy of Dr. W. F. Lorenz, Director.

quent to the inoculation, all of the rabbits were observed clinically at weekly intervals and serologically at biweekly intervals for a period of eight months.

RESULTS

The rabbits showed no manifest local or general reaction to the repeated injections of organic luetin or of luetin control extract. The Wassermann reactions of the entire group of twenty-two rabbits remained consistently negative during the period of attempted immunization. Subsequent to the inoculation of the living organisms, the clinical and serologic course of the disease in the three groups—the animals treated with luetin, those treated with the luetin control extract and the untreated animals—was so definitely similar that there is no need for describing the findings in detail. Suffice it to say that within the limits of individual variation, the incubation period of the active infection, the severity and duration of the local lesions (orchitis and chancre), the incidence of metastases to the opposing testis, the frequency and severity of the generalized lesions and the duration of the positive Wassermann reaction were the same for each of the three groups of rabbits.

COMMENT

The failure of the injections of organic luetin to alter the negativeness of the Wassermann reactions of the rabbits confirms the results of Prüsener,[12] who found only complement-fixing bodies for pallida antigen and not for the ordinary Wassermann antigen in the serums of rabbits treated with aqueous extracts of testicular syphilomas. The practically identical clinical and serologic course of the experimental syphilitic infection in the rabbits treated with luetin, in those treated with the luetin control extract and in the untreated rabbits attests the complete failure of the attemped immunization to produce either local testicular or generalized immunity to the disease. The likelihood that a longer period of immunization would have been effective is practically nil, as the results reported here showed no evidence of even a partial immunity. At the present time, therefore, the possibility of producing an artificial active immunity to experimental syphilis in rabbits by the injection of extracts of syphilitic testes appears to be remote.

SUMMARY

1. In an attempt to produce artificial active immunity against experimental syphilis in rabbits, each of fourteen animals was given, at four day intervals, a total of sixty-five injections of 1 cc. of a physiologic solution of sodium chloride extract of syphilitic rabbit testes, containing 5 or 6 dead Spirochaetae pallidae (Nichols strain) per dark field. In

12. Prüsener, L.: Ztschr. f. Immunitätsforsch. u. exper. Therap. **72**:515, 1931.

one half of the animals the injections were made into the right testes and in the other half subcutaneously. Another group of eight rabbits was similarly treated with a control extract prepared from normal rabbit testes, one half of the animals of this group receiving injections intratesticularly and the other half subcutaneously.

2. The Wassermann reaction of all of the rabbits remained consistently negative during the two hundred and sixty day period of attempted immunization.

3. Subsequent to the completion of the attempted immunization, both groups of rabbits, together with a second control group of four untreated rabbits, were inoculated into the right testes with the homologous strain of living Spirochaeta pallida. Within the limits of individual variation, the incubation period of the active syphilitic infection, the severity and duration of the local lesions, the incidence and severity of metastatic lesions and the duration of the positive Wassermann reaction were identical for each of the three groups.

4. The method of attempted immunization employed, therefore, was entirely unsuccessful in the production of any local testicular or generalized active immunity to experimental syphilis in the rabbit.

Mr. J. L. Goldstein, research assistant in the Department of Physiology and Pharmacology, gave technical assistance during the progress of this research.

QUANTITATIVE ESTIMATES OF HYDROGEN SULPHIDE IN LOTIONS USED IN TREATMENT OF ACNE

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After many months of qualitative tests for hydrogen sulphide in lotio sulphurata [1] and other medicaments used in the treatment of acne vulgaris, it was deemed advisable to proceed with a quantitative study. Considerable difficulty was experienced in determining the hydrogen sulphide content of the various lotions by means of the methods heretofore reported. However, from the basic principles of these methods, a procedure for the research was finally evolved. The results of the experiments, the qualitative studies previously made and the clinical results obtained were so in agreement that it is felt that a preliminary statement of the findings is warranted.

The theoretical considerations as to the usefulness of hydrogen sulphide in the pharmaceutic therapy of acne vulgaris, as well as the historical investigation, will not be discussed in this report.

A description of the methods used in the chemical studies will be reserved for a later paper. The figures given here should be considered as relative, and not as absolute, values. From the tables presented in the following pages it is hoped that the clinician will have a better understanding of the workings of lotio sulphurata and its substitutes. He may also come to understand the failure of some of the favorite prescribed remedies.

LOTIO SULPHURATA

The lotio sulphurata was prepared according to the formulary used by the hospital for many years. The terms "two-ply," "four-ply" and "six-ply" mean that 2, 4 and 6 drachms (7.8, 15.5 and 23.3 Gm., respectively) of zinc sulphate and 2, 4 and 6 drachms of potassa sulphurata were used to every 4 ounces (120 cc.) of water. In November, samples of freshly prepared lotio sulphurata were analyzed. The relative amount of hydrogen sulphide in 5 cc. of a solution of two-ply lotio

From the Stuyvesant Square Hospital, formerly the New York Skin and Cancer Hospital.

Read before the New York County Pharmaceutical Association, Feb. 16, 1933, and before the Clinical Society of the Stuyvesant Square Hospital (stated meeting of Feb. 24, 1933).

1. Goodman, Herman: Rational Pharmaceutical Treatment of Common Skin Diseases, New York, Medical Lay Press, 1932, p. 191.

sulphurata was 13.3 mg.; of four-ply lotio sulphurata, 26 mg., and of six-ply lotio sulphurata, 60.4 mg.

A month later, the hydrogen sulphide was determined for freshly prepared six-ply lotio sulphurata secured by prescription from three different pharmacies. As shown by the figures in table 1, the number of milligrams of the active ingredient varies, although the lotions were made up from the same prescription.

The varying hydrogen sulphide content of lotio sulphurata prepared by different pharmacies raised the question whether the six-ply lotio sulphurata prepared by the same pharmacy at different intervals would be fairly constant. The answer is given in table 2.

TABLE 1.—*Variation in Hydrogen Sulphide Content of Six-Ply Lotio Sulphurata from Different Pharmacies*

	Hydrogen Sulphide, Mg. per 5 Cc. Lotio Sulphurata
Yonkers, N. Y.	50.2
Long Island City, N. Y.	62.9
Staten Island, N. Y.	52.5

TABLE 2.—*Variation in Hydrogen Sulphide Content of Six-Ply Lotio Sulphurata Made by the Same Pharmacy on Different Occasions*

Date	Hydrogen Sulphide, Mg. per 5 Cc. Lotio Sulphurata
11/ 8/32	60.4
12/12/32	48.2
1/19/33	57.3

POTASSA SULPHURATA

These results brought to mind the suggestion offered by Raubenheimer that the solid potassa sulphurata was unstable as compared with the solution made from the solid substance. The figures in table 3 show that the larger pieces of solid potassa sulphurata had a higher hydrogen sulphide content than the smaller pieces.

Raubenheimer's suggestion that a solution of potassa sulphurata is more stable was then considered. A 6 per cent solution of potassa sulphurata was made up and tested; 5 cc. of the solution was found to contain 29.4 mg. of the active ingredient. This solution was placed in a glass container with a ground glass stopper and allowed to stand for two months, at which time it was examined and found to contain 29.2 mg. for each 5 cc. of solution.

In the meantime, the question whether or not potassa sulphurata was the chief source of the active ingredient of lotio sulphurata arose. Varying percentages of solution of potassa sulphurata were made up:

the results of the experiment are given in table 4. The other ingredient, zinc sulphate, was studied, and no hydrogen sulphide was found.

Since the potassa sulphurata is shown to be the source of the hydrogen sulphide content, a study was made of the solutions of potassa sulphurata used by different pharmacies in the preparation of lotio sulphurata. The active ingredient was determined also for solutions made

TABLE 3.—*Hydrogen Sulphide Content in Direct Proportion to Size of Pieces of Potassa Sulphurata in Solution*

Date	Hydrogen Sulphide, Mg. per 5 Cc. Potassa Sulphurata Solution*
2/ 2/33	19.95
2/ 6/33	14.92 (broken pieces)
2/ 9/33	20.7
2/15/33	20.8

* The solution contained 215 mg. of solid potassa sulphurata.

TABLE 4.—*Hydrogen Sulphide in Solutions of Potassa Sulphurata of Varying Percentages*

Potassa Sulphurata, per Cent	Hydrogen Sulphide, Mg. per 5 Cc. Potassa Sulphurata
6	29.4
12	53.6
24	109.4
50	255.5

TABLE 5.—*Varying Amounts of Hydrogen Sulphide in Different Solutions of Potassa Sulphurata*

Made at Different Pharmacies	Hydrogen Sulphide, Mg. per 5 Cc. Potassa Sulphurata
Yonkers, N. Y.	52.7
Long Island City, N. Y.	70.7
New York City	53.6
Date — Made at the Same Pharmacy	
11/17/32	58.6
1/ 4/33	52.7
1/19/33	62.4

by the same pharmacy at different intervals, with the results shown in table 5.

The next phase to be considered was the hydrogen sulphide in the various solutions of potassa sulphurata from which the lotions were made. These lotions were made by the same pharmacist (table 6).

The storing qualities, simulating the clinical value, of lotio sulphurata so far as its content of hydrogen sulphide is concerned were next studied. A patient, for example, uses part of a bottle of freshly prepared lotio sulphurata day by day. What is the content of hydrogen

sulphide for the period over which a prescription usually lasts? How active is it several months later? These storing qualities are indicated in table 7.

TABLE 6.—*Content of Hydrogen Sulphide in Solutions of Potassa Sulphurata and in Lotio Sulphurata*

Hydrogen Sulphide, Mg. per 5 Cc.	
Potassa Sulphurata	Lotio Alba
29.4	13.9 (2-ply)
53.6	26.2 (4-ply)
109.4	61.5 (6-ply)

TABLE 7.—*Storing Qualities of Lotio Sulphurata*

	Hydrogen Sulphide, Mg. per 5 Cc. Lotio Sulphurata	
Date	2-Ply	6-Ply
12/ 7/32	15.8	57.7
12/ 9/32	16.0	57.4
12/12/32	16.1	58.3
12/14/32	16.4	57.4
12/16/32	16.1	56.4
12/19/32	16.0	57.0
12/23/32	16.2	
12/28/32	16.2	
12/30/32	16.1	
2/14/33	14.9	56.1
8/ 2/33	0.25	dried

TABLE 8.—*Storing Qualities of Potassa Sulphurata Solutions of Varying Percentages*

	Hydrogen Sulphide, Mg. per 5 Cc. Potassa Sulphurata Solution						
Date	6%	6%	12%	24%	50%	50%	50%
11/17/32	29.4	....	53.6	109.4	255.5		
11/21/32	31.5	....	56.0	111.9	257.2		
11/23/32	30.2	....	54.9	108.5	254.9		
11/25/32	29.2	....	53.9	108.6	258.9		
11/28/32	29.2	....	53.9	108.5	258.9		
11/30/32	29.5	....	52.8	108.7	256.0		
12/ 2/32	29.2	....	52.4	107.1	252.2		
12/ 5/32	28.5	....	51.1	105.3	253.5		
12/ 7/32	....	29.7	....	.....	.....	239.5	291.0
12/ 9/32	....	28.1	....	.....	.....	244.2	293.0
12/12/32	....	26.9	....	.....	.....	246.6	286.0
12/14/32	....	25.5	....	.....	.....	239.5	284.2
12/16/32	....	26.0	....	.....	.....	230.4	281.6
12/19/32	....	26.3	....	.....	.....	227.2	
12/21/32	....	24.3	....	.....	.....	224.8	
12/23/32	....	24.7	....	.....	.....	239.6	
12/28/32	....	23.5	....	.....	.....	210.0	
12/30/32	....	24.6	....	.....	.....	227.2	
2/14/33	29.2	22.3	53.5	103.5	243.5	.....	271.0
8/ 2/33	19.7	....	51.5	22.7	127.5	44.9	

The storing qualities of solutions of potassa sulphurata so far as hydrogen sulphide content is concerned, as determined for concentrations of various percentages and for more than one sample, are shown in table 8.

SOLID LOTIO SULPHURATA

For several years, a variant of lotio sulphurata under the name "solid lotio sulphurata" has been prescribed for patients with acne. It is prepared by mixing concentrated aqueous solutions of potassa sulphurata and zinc sulphate. The method used for its preparation is as follows: One hundred parts of potassa sulphurata are dissolved in one hundred parts of water and filtered. One hundred parts of zinc sulphate are dissolved in one hundred parts of water and filtered. The two solutions are mixed. The hydrogen sulphide was determined for 1 Gm. of the solid potassa sulphurata by dissolving the potassa sulphurata in 1 cc. of water; it was found to contain 52.7 mg. of the active ingredient. At the same time, 1 Gm. of zinc sulphate was dissolved in 1 cc. of water, and no hydrogen sulphide was found. On the same day, these two solutions were mixed, and a paste was formed. One gram of the resulting mixture gave 27.9 mg. of hydrogen sulphide.

Table 9 shows the storing qualities of solid lotio sulphurata in a wooden container.

TABLE 9.—*Storing Qualities of Solid Lotio Sulphurata in Wooden Containers*

	Hydrogen Sulphide, Mg. per Gm. Substance		
	Potassa Sulphurata*	Zinc Sulphate*	Paste Made†
1/ 4/33	52.7	0.0	27.9
1/ 5/33	51.3	...	21.5
1/ 6/33	53.4	...	19.2
1/ 7/33	51.9	...	15.9
1/ 9/33	46.1	...	11.8
1/10/33	51.5	...	16.1
1/11/33	51.0	...	11.6
1/13/33	51.6	...	12.0
1/16/33	50.0	...	13.8

* One gram of solid substance to 1 cc. of water.
† One cubic centimeter of zinc sulphate to 1 cc. of potassa sulphurata.

TABLE 10.—*Storing Qualities of Solid Lotio Sulphurata in Glass Containers*

	Hydrogen Sulphide, Mg. per Gm. Substance			
	Potassa Sulphurata (1 : 1)	Zinc Sulphate (1 : 1)	Paste Made (1 : 1)	
Date			Glass Jar	Wooden Box
1/18/33	55.1	0.0	25.1	
1/19/33	54.8	...	23.8	
1/20/33	56.4	...	25.5	22.9
1/23/33	54.9	...	22.5	18.3*
1/25/33	55.5	...	25.7	
1/27/33	55.6	...	26.2	
1/30/33	54.0	...	26.2	
2/ 6/33	....	...	26.0	
2/ 9/33	50.0	...	23.9	
2/15/33	52.5	...	23.8	
8/ 2/33	21.6	...		

* The wooden box split, releasing the contents.

After twelve days, the paste stored in the wooden containers became too dry and hard to be used by the patient, so the hydrogen sulphide content was not determined. New preparations of solid lotio sulphurata were made and stored in glass jars. The result compiled in table 10 show the storing qualities of the paste in a glass jar as compared with those of the paste in the wooden container.

LOTIO SULPHURATA COMPOUND

Another popular prescription has long been known and used under the name of "lotio sulphurata compound" or "fortified lotio sulphurata." The formula consists of lotio sulphurata, as ordinarily prescribed, with the addition of three parts of precipitated sulphur. In clinical work this combination was thought to be less efficacious than the lotio sulphurata alone. Treatment with the compound was thought to be irrational therapeutics on the basis of theoretical considerations as to the actions of lotio sulphurata and of precipitated sulphur.

TABLE 11.—*Comparison of Content of Hydrogen Sulphide in Lotio Sulphurata and in Lotio Sulphurata Compound*

	Hydrogen Sulphide, Mg. per 5 Cc.	
Date	6-Ply	6-Ply Plus 3 per Cent Precipitated Sulphur
12/12/32	46.4	39.2
12/14/32	47.2	39.1
12/16/32	46.9	40.5
12/19/32	46.0	40.0
12/28/32	45.9	40.2
12/30/32	45.2	39.7
2/14/33	43.3	39.9
8/ 2/33	dried	dried

Two samples of six-ply lotio sulphurata were taken; to one, 3 per cent precipitated sulphur was added to make the lotio sulphurata compound. The two samples were studied together; the results are given in table 11.

The hydrogen sulphide content of precipitated sulphur and sublimed sulphur was next studied, and it was found that the active ingredient was not present.

In the therapy of acne vulgaris it appeared that the activity of lotio sulphurata and of the solution of potassa sulphurata depended on the content of hydrogen sulphide. It occurred to me that an aqueous solution of hydrogen sulphide gas from the containers commercially available might be utilized. Under proper precautions, the gas from a small tank of laboratory type was allowed to escape into a flask of water. Periodic determinations were made for the quantity of hydrogen sulphide in the water just as they were made for the lotio sulphurata and the potassa sulphurata. The results are given in table 12.

Following the study of lotio sulphurata of varying strengths and of lotio sulphurata compounds, other acne lotions were examined as to content of hydrogen sulphide. A lotion known as Vleminckx's solution

TABLE 12.—*Aqueous Solution of Gaseous Hydrogen Sulphide*

Date	Hydrogen Sulphide, Mg. per 5 Cc. Solution
11/ 8/32	4.88
11/ 9/32	3.61
11/10/32	3.36
11/11/32	3.36
11/14/32	3.62
11/17/32	2.06
11/21/32	2.20
11/23/32	2.30
11/25/32	1.86
11/28/32	1.86
12/ 2/32	1.45
12/ 6/32	1.28
2/13/33	0.85
8/ 2/33	none

TABLE 13.—*Content of Hydrogen Sulphide in Vleminckx's Solution Made a Year Previous to the Test*

Date	Hydrogen Sulphide, Mg. per 5 Cc. Solution
11/ 8/32	50.9
11/ 9/32	50.9
11/10/32	49.9
11/11/32	50.5
11/12/32	56.2
11/14/32	52.3
11/17/32	49.5
11/21/32	51.0
11/23/32	50.3
11/28/32	50.0
12/ 1/32	49.4
12/ 5/32	48.5
2/14/33*	31.7
8/ 2/33	none

* The solution was colorless, and there was a precipitate on the bottom of the bottle.

TABLE 14.—*Hydrogen Sulphide in Freshly Prepared Vleminckx's Solution*

Date	Hydrogen Sulphide, Mg. per 5 Cc. Solution
12/ 7/32	192.3
12/ 9/32	192.7
12/12/32	191.2
12/14/32	189.2
12/16/32	189.8
12/19/32	190.1
2/14/33	187.8
8/ 2/33	14.0

is often advised in the treatment of acne vulgaris. It has been found to be efficacious. A sample of Vleminckx's solution was analyzed, and the values given in table 13 were obtained.

The quantity of hydrogen sulphide found in the sample of Vleminckx's solution used in this test was about that found in six-ply lotio sulphurata.

The clinical results in acne when this formula was used were better than those when six-ply lotio sulphurata was used. The reason for the low hydrogen sulphide content was that the sample of Vleminckx's solution analyzed and reported in table 13 was made over a year previously. A freshly made sample of Vleminckx's solution was next studied, and the results shown in table 14 were more in accord with the clinical results in acne vulgaris.

Recent publication of a formula for a paste made with Vleminckx's solution led to the study of the hydrogen sulphide content.

The paste was made from a Vleminckx's solution which contained 206.9 mg. of the active ingredient per five cubic centimeters. The theoretical calculations show that the paste should contain 9.74 mg. of hydrogen sulphide per gram. The preparation was made and analyzed on May 13, 1933, and was found to contain 9.58 mg. of hydrogen sulphide per gram of the paste. On September 12, the ointment contained 7.4 mg. of the active ingredient per gram.

The clinical use of Kummerfeld's solution showed that it had no effect on the lesions of acne vulgaris. It is not surprising that samples of Kummerfeld's solution gave no evidence of hydrogen sulphide.

The results offered in this preliminary study suffice to indicate the character of the research that is being made. As previously stated, the figures which have been tabulated are the relative rather than the absolute values.

18 East Eighty-Ninth Street.

LXV.—PITYROSPORON OF MALASSEZ

M. F. ENGMAN, JR., M.D.
AND
O. E. HAGEBUSCH, M.D.
ST. LOUIS

The pityrosporon of Malassez, the flask bacillus of Unna or the "bottle" bacillus, is an organism the true nature and proper classification of which it is impossible to determine in the light of present knowledge. It appears in the scales of dandruff, in seborrheic dermatitis and frequently in psoriasis. It is part of the flora of comedones. Probably it is not a bacillus at all, but belongs to the fungi. It is usually an oval or roundish body with one "bud" which gives it a flasklike or gourdlike appearance. It is fairly regular in size (about 7 microns in length). No mycelian forms have been observed in scales. It is easily seen in scales soaked in a 20 per cent solution of potassium hydroxide or when stained with ordinary aniline dyes. Knowledge of the organism is practically limited to its morphologic characteristics. Its pathogenicity has not been determined.

We were urged to study the culture of the pityrosporon of Malassez by Dr. M. F. Engman, Sr., who has for some years held the theory that psoriasis and seborrheic dermatitis are both forms of pityrosporon infection. That is, the organism may enter the blood stream, as in other infections, from an initial spot (most frequently in the scalp), later localizing itself in eruptive areas in the skin. For this reason we undertook the study of the culture of this organism as the first step in the study of these conditions.

The literature on the culture of the pityrosporon is meager. Attempts to grow this organism have been made in many laboratories during the past thirty years, but most of them have been unsuccessful. Sabouraud,[1] in his book on pityriasis, commented on his own unsuccessful attempts, and concluded that the organism cannot be cultured on any known mediums. In 1892 or 1893, Unna [2] was able to obtain a growth on nutritent agar, which he believed to be the pityrosporon. He secured one subculture, but was not able to transplant successfully beyond that point. He turned the problem over to Engman, Sr., his assistant at that time. Engman, Sr.,[2] grew the organism a few times

From the Research Department of the Barnard Free Skin and Cancer Hospital.

1. Sabouraud, R.: Pityriasis et alopécies pelliculaires, Paris, Masson et Cie, 1904.

2. Quoted by Hodara.[3]

on nutrient agar and secured a subculture on two or three occasions, but he also was not able to develop growth in subsequent subcultures. Hodara,[3] who followed Engman, Sr., in Unna's laboratory, obtained only two cultures and no subcultures.

McLeod and Dowling [4] cultured from scales of seborrheic dermatitis an organism which they believed to be the pityrosporon. This organism grew readily on Sabouraud's medium and on acid glycerin agar. They claimed that they obtained pure subcultures readily, and they studied the cultural characteristics of this organism.

Acton and Panja [5] also obtained from scales of seborrheic dermatitis cultures of an organism which they identified as the pityrosporon. They used Petroff's glycerinated medium containing 0.004 per cent gentian violet to inhibit the staphylococcus.

Benedek [6] reviewed the literature on the pityrosporon, naming it the cryptococcus of Malassez, and stated that probably most of the previous successful cultures were not those of the cryptococcus. He claimed that it is not possible to obtain a culture by the mass planting of scales on agar. However, he was successful in growing the pityrosporon in a hanging drop. Subcultures succeeded, although with difficulty.

EXPERIMENTAL DATA

Our first objective was to devise mediums on which the pityrosporon would grow readily and in pure culture. Our second objective was to make numerous blood cultures from patients with psoriasis and seborrheic dermatitis. Since the early experimenters had used, with a slight degree of success, simple mediums, such as nutrient agar and Sabouraud's medium, we made our first attempts with the same mediums. These mediums were inoculated with scales from patients with seborrheic dermatitis, ordinary seborrhea and psoriasis. Scales from the same patients were first stained or soaked in a 20 per cent solution of potassium hydroxide and were examined for the presence of the pityrosporon. No growth of any forms which resembled the pityrosporon, as seen in the scales, was obtained. However, staphylococci, yeastlike organisms which were probably Monilia, molds and many saprophytic bacilli grew readily. Although Sabouraud's medium gave entirely negative results, it contains a high percentage of carbohydrate and is in general a useful medium for growing organisms of the fungus group.

Our next step was the addition of various percentages of maltose and dextrose, separately and together, to nutrient agar. We also varied the hydrogen ion concentration in these different mediums between p_H values of from 4 to 8. We

3. Hodara, M.: Etude sur le diagnostic bactériologique de l'acné, J. d. mal. cutan. et syph. **6**:516, 1894.

4. MacLeod, J. M. H., and Dowling, G. B.: An Experimental Study of the Pityrosporon of Malassez: Its Morphology, Cultivation and Pathogenicity, Brit. J. Dermat. **40**:139 (April) 1928.

5. Acton, H. W., and Panja, G.: Seborrhoeic Dermatitis or Pityriasis Capitis: A Lesion Caused by the Malassezia Ovale, Indian M. Gaz. **62**:603, 1927.

6. Benedek, T.: Cryptococcus Malassezi, Zentralbl. f. Bakt. (Abt. 1) **116**: 317, 1930.

obtained growth of the pityrosporon in a nutrient agar medium containing 6 per cent dextrose at a p_H of from 7.6 to 7.8. The growth occurred only in deep stabs. There was no growth in mediums containing less than 4 per cent dextrose and below a p_H of 6.8.

The growth obtained in this manner was most unsatisfactory. It was badly contaminated with staphylococci, and all attempts to obtain a subculture were unsuccessful. However, the organism present in these cultures was morphologically identical with the pityrosporon as seen in the scales. The forms were of a regular size and were not larger than those in the scales. A few oval forms were present, but nearly all the organisms were of the "bottle shape." They stained uniformly with ordinary aniline dyes, as does the pityrosporon in the scales. There were no mycelia, and no organism showed more than one "bud." Apparently this was a true growth of the pityrosporon.

As our first positive culture was in a deep stab, anaerobic methods were tried. Under complete anaerobic conditions no growth occurred. We afterward succeeded in growing this organism from scales on the surface of petri dishes aerobically, but found that growth was improved by partial anaerobiosis.

We next attempted to improve the mediums in order to obtain better growth of the pityrosporon, to succeed in obtaining subcultures and to eliminate the staphylococcus. Since the pityrosporon grows so readily in oily scalps, we tried in various ways to reproduce such conditions in our culture mediums. Hydrous wool fat and the alcohol-ether extractives of egg yolk and of brain tissue were added in varying proportions to our mediums, without success. Seborrheic scalps and oily skins were washed with alcohol and ether, and the residues were added to the mediums, also without success. The hair of the head of two patients with seborrheic dermatitis of the scalp was clipped off and boiled in tap water for several hours. This water was used in the making of mediums. Parings from the soles of calloused feet were obtained. These were extracted with alcohol and ether and were then dried, ground up and added to mediums. We thus provided a keratinized soil. None of these methods was successful. Cystine (0.2 per cent) added to the mediums gave slightly higher percentages of positive cultures from the same patients than did the ordinary mediums.

We tried several methods in an attempt to inhibit the staphylococcus. Soaking the scales in alcohol or in alcohol and ether resulted either in growth of only staphylococci and bacilli or in entirely negative cultures. Gentian violet added in sufficient quantities to inhibit staphylococci likewise inhibited the pityrosporon. Exposure of the cultures to ultraviolet light killed the staphylococci but also killed the pityrosporon. The blood of rabbits immunized to staphylococci was added to our mediums, but staphylococci were not inhibited. Thus all attempts to rid the culture of the contaminating staphylococci were unavailing.

We also attempted to grow the pityrosporon in a hanging drop, according to the method of Benedek,[6] but obtained only a considerable growth of staphylococci, various bacilli and, on one occasion, an unidentified Monilia.

Various other mediums were tried, such as gelatin, rancid butter agar, Kracke's medium, Loeffler's coagulated blood serum, Dorsett's egg medium (both with and without gentian violet), Petroff's medium as recommended by Acton and Panja,[5] Huntoon's hormone agar and broth, fish, cornmeal mush and chocolate blood agar. None of these mediums was successful.

Blood cultures from forty-eight patients with untreated psoriasis and from eighteen patients with seborrheic dermatitis were made, the dextrose agar with cystine, on which we had obtained some growth, being used. All these cultures were negative.

COMMENT

We interpret this experiment as having given essentially negative results. We did not succeed in growing the pityrosporon in pure culture. We have never seen the colony type of the organism, as all our cultures were either in deep stabs or beneath scales, where they were grossly contaminated with staphylococci. We were unable to obtain subcultures of the pityrosporon. However, we obtained a growth in the mediums of a bottle-shaped organism of uniform size, which in every morphologic feature exactly duplicated the pityrosporon as seen in the scales from the same patients. This organism was very difficult to grow, was remarkably free from pleomorphic forms and did not show mycelia. In a few cases it was oval, but it was usually of a bottle-like form, with only a single bud, and was about half the size of the ordinary yeastlike organism. We consider the evidence that this organism was in truth the pityrosporon of Malassez to be mainly presumptive.

During the course of this experiment we encountered hundreds of yeastlike organisms, many of which had a bottle-like form. These were all large and grew readily, and most of them showed mycelia and pleomorphic forms. For want of a better classification we considered these organisms simply as Monilia.

Our experience in attempting to grow the pityrosporon, as outlined in this article, leaves us in doubt as to the true nature of the organisms reported in the last few years as successful cultures of the pityrosporon of Malassez.

Obituary

WILLIAM R. BATHURST, M.D.
1876–1933

Dr. William R. Bathurst of Little Rock, Ark., died on Aug. 31, 1933, at the untimely age of 56. He was born in Mount Union, Pa., Nov. 13, 1876, but after boyhood his life was spent in the South, where he became one of the most prominent members of the medical profession. He obtained his medical degree from the University of the South in 1899, and was in general practice at Prescott, Ark., for six years. After nearly two years' study of dermatology in London, Paris and Berlin, he established himself in the practice of dermatology in Little Rock in 1906, and soon attained an outstanding position. He was appointed professor of dermatology in the school of medicine of the University of Arkansas in 1908, and continued to hold this professorship until his death. He was active in organizing the Section on Dermatology in the Southern Medical Association in 1923, and took part in all of the dermatologic activities in the South.

Dr. Bathurst early became interested in general medical affairs. From 1912 until his death he ably edited the *Journal of the Arkansas Medical Society*. In 1919, he was elected secretary of the society and had the rare distinction of being reelected without opposition each year until his death. In 1928, he was elected president of the Southern Medical Association, as a result of his outstanding work in the affairs of that association.

Dr. Bathurst is an illustration, of which there are many, of the commanding position in the medical profession which may be attained by men specializing in dermatology, circumscribed as the specialty is supposed to be. His great influence is shown, not only by the position which he attained in life, but by the tributes which his death brought forth. The *Journal of the Arkansas Medical Society* of October is given over to memorials to him. There are recorded resolutions in his honor by the Arkansas Medical Society, by the medical societies of the following counties, Pulaski, Benton, Craighead-Poinsett, Crawford, Franklin, Faulkner, Greene, Garland, Hot Spring, Jefferson, Johnson, Miller, Mississippi, Prairie, St. Francis, Saline, Sebastian, Scott, Washington and Woodruff, and by the Tenth Councilor District Medical Society and the Arkansas Tuberculosis Association. Other memorials to him are in the form of editorials in the *Arkansas Gazette* and the *Southern Medical Journal* and a tribute from the Dean of Trinity Episcopal Cathedral.

Few men have such an outflow of tributes of respect and affection.

W. A. P.

Abstracts from Current Literature

EDITED BY DR. HERBERT RATTNER

A CHEMICAL PECULIARITY OF PELLAGRA BLOOD (RAPID IODIN DECOLORIZATION): PRELIMINARY REPORT. C. H. CAMPBELL, Am. J. M. Sc. **186**:266 (Aug.) 1933.

A new method is presented for determining the presence of pellagra, which, if developed, may be exceedingly valuable in early diagnosis. The reagents used are an alcohol and ether mixture, compound solution of iodine, U. S. P., and erythrocytes of normal (control) and suspected blood.

The method of preparation and mixture of these ingredients is given in detail. The final reading is a determination of the degree of decolorization that has occurred after the test tubes have stood for twelve hours. This determination is made by comparing the tubes of normal and suspected blood with a scale consisting of tubes of a 3 per cent solution of potassium dichromate in dilutions of from 1:5 to 1:240.

Further work may prove this test to be of value in conditions of malnutrition and avitaminosis other than pellagra.

JAMIESON, Detroit.

TUBEROUS SCLEROSIS. H. L. STEWART and E. L. BAUER, Arch. Path. **14**:799 (Dec.) 1932.

Two fatal cases of tuberous sclerosis, with the results of postmortem examination, are reported. In one patient, a Negro infant, there were associated lesions of adenoma sebaceum. The authors emphasize the features of lipodystrophy and suggest that tuberous sclerosis is a congenital disturbance in metabolism.

DERMATITIS DUE TO NUPERCAINE. R. W. FOWLKES, J. A. M. A. **100**:1171 (April 15) 1933.

In a man, aged 37, an acute dermatitis developed in the intergluteal fold after the application of a 1 per cent nupercaine ointment. Withdrawal of the ointment and the use of wet dressings cleared up the eruption. Contact patch tests with the nupercaine ointment and with a 1 per cent aqueous solution of nupercaine were strongly positive, while passive transfer tests were negative.

TREATMENT OF BURNS WITH GENTIAN VIOLET. J. H. CONNELL, T. J. FATHERREE, C. B. KENNEDY and G. H. MCSWAIN, J. A. M. A. **100**:1219 (April 22) 1933.

The authors report excellent results in the treatment of burns of all three degrees by the application of a jelly made by adding 3 per cent of tragacanth to a 1 per cent aqueous solution of gentian violet.

THE 1932 THALLOTOXICOSIS OUTBREAK IN CALIFORNIA. J. C. MUNCH, H. M. GINSBURG and C. E. NIXON, J. A. M. A. **100**:1315 (April 29) 1933.

Symptoms of thallium poisoning developed in twenty of thirty-one persons who had consumed an unknown quantity of thallium sulphate present in grain that had been prepared for the extermination of rodents. These cases presented a well defined clinical picture of abdominal colic, nausea, vomiting and diarrhea or constipation, stomatitis, alopecia, peripheral neuritis and symptoms referable to cerebral involvement. Six of the patients died within sixteen days, and one about two months later. Postmortem examination of these seven patients showed fatty infiltration and necrosis of the liver, diffuse nephritis, gastro-enteritis, degenerative

changes and hemorrhages in the medulla of the suprarenal glands, pulmonary edema and widespread degenerative changes in the nerve cells and axons. Thallium was found to be present in the kidneys, liver, lungs and spleen.

The following treatment for thallium poisoning is recommended: (1) the administration of emetics and cathartics if the case is seen early; (2) the fixation of thallium in an insoluble form by intravenous injections of sodium iodide; (3) the gradual elimination of thallium by intravenous injections of sodium thiosulphate, and (4) symptomatic treatment.

THE SPECIFIC EFFECT OF "FOUADIN" (FUADIN) ON GRANULOMA INGUINALE. T. V. WILLIAMSON, J. W. ANDERSON, R. KIMBROUGH and A. I. DODSON, J. A. M. A. **100**:1671 (May 27) 1933.

This is a preliminary report on the use of fuadin (antimony-II-pyrocatechin-sodium disulphonate) for the treatment of granuloma inguinale. The use of the drug to replace antimony and potassium tartrate for the treatment of granuloma inguinale was suggested by its effectiveness in bilharziasis, a disease for which antimony and potassium tartrate had been previously used. Fuadin is injected intramuscularly; there is practically no local pain and no immediate general reaction, and only rarely does vomiting occur later. A cure is obtained in about two weeks. Detailed reports of seven cases are given, as well as the results in seven additional cases. In all the cases the treatment effected a cure.

DERMATITIS PRODUCED BY COSMETICS (LA GERARDINE). L. HOLLANDER, J. A. M. A. **101**:259 (July 22) 1933.

The author reports three cases of dermatitis on the face and neck caused by the use of "La Gerardine" to produce a wave in the hair. A thorough shampoo of the hair, a change of pillow cases and the discontinuation of the preparation were followed by rapid recovery in each case.

VITAMIN D IN THE TREATMENT OF ACNE VULGARIS. A. DOKTORSKY and S. S. PLATT, J. A. M. A. **101**:275 (July 22) 1933.

Considerable improvement was noted in thirty-seven cases of acne vulgaris following the ingestion of viosterol in oil 250 D, beginning with a dose of 10 drops a day and increasing this to 20 drops daily.

TREATMENT OF NEUROSYPHILIS WITH MALARIA. PAUL A. O'LEARY and ASHTON L. WELSH, J. A. M. A. **101**:498 (Aug. 12) 1933.

Malaria treatment was used in 984 patients with neurosyphilis. In advanced dementia paralytica, there was complete remission in 35 per cent of the patients and marked improvement was noted in 35 per cent. In early dementia paralytica there was great improvement in 81 per cent of the patients, while in nearly half of the cases of asymptomatic neurosyphilis the serologic tests of the spinal fluid became completely reversed to negative. Improvement was also noted in patients with the tabetic form of dementia paralytica and in those with tabes dorsalis. Results were discouraging, however, in tabetic patients who gave negative serologic reactions and yet had resistant complications and in patients with congenital neurosyphilis. The authors urge the use of malarial treatment not only in cases of dementia paralytica but particularly in cases of neurosyphilis in which the patients do not respond favorably to other antisyphilitic treatment.

PHENOLPHTHALEIN INTOXICATION. BEN A. NEWMAN, J. A. M. A. **101**:761 (Sept. 2) 1933.

The author reports two cases of phenolphthalein intoxication with cutaneous lesions, one caused by "Agarol" and the other by "Ex-Lax" tablets. In reviewing the literature he lists the various cutaneous manifestations and visceral involvements

that may be produced by phenolphthalein, and he mentions the extensive use of the drug in the form of cathartics, dentifrices and food coloring.

POISON IVY: A NEW METHOD OF IMMUNIZATION. F. MAISEL, J. Allergy **4**:35 (Nov.) 1932.

A young man had had annual attacks of poison ivy dermatitis for about ten years in spite of repeated injections, given both therapeutically and as a preventive. Desensitization was attempted by daily immersion in a bath to which tincture of poison ivy was added in gradually increasing concentration, beginning with a dilution of 1 drop in 10 gallons (40 liters) of water and increasing to 30 cc. in 4 gallons (16 liters) of water. Repeated exposure to poison ivy after this course of baths was followed by the development of only a small vesicular lesion on one ankle, and patch tests showed only a very slight reaction to tincture of poison ivy.

ECZEMATOUS DERMATITIS DUE TO EXPOSURE TO CHLORAL. E. W. ABRAMOWITZ and M. H. NOUN, J. Allergy **4**:338 (May) 1933.

A pharmacist became sensitized to chloral hydrate by frequent contact with it. Specific sensitization to this drug was shown by repeated attacks of eczematous dermatitis following exposure, freedom from lesions when contact was avoided, and strongly positive patch tests to chloral hydrate and not to other irritant drugs.

CARO, Chicago.

THE LYMPHATIC PARTICIPATION IN HUMAN CUTANEOUS PHENOMENA: A STUDY OF THE MINUTE LYMPHATICS OF THE LIVING SKIN. S. S. HUDACK and P. D. MCMASTER, J. Exper. Med. **57**:751 (May 3) 1933.

In a series of experiments the authors demonstrated the lymphatic capillaries in the living skin, and by means of injected vital dyes reached some interesting conclusions.

It was found that these lymphatics form an extraordinarily abundant anastomotic web into which the dyes are readily absorbed through the most minute abrasion of the cutaneous surface. In some persons fluid which is injected intradermally is spread through the superficial network; in others, it enters the deep lymphatics at once. Absorption of dyes through fine abrasions is a matter of only a few minutes.

The permeability of the lymphatic wall in man is similar to that of the mouse and is subject to rapid changes. A slight blow will increase the permeability markedly; the same result follows inflammation due to heat, ultraviolet rays, histamine or bacterial products. A rapid outpouring of fluid from the blood vessels compresses the lymphatics and interferes with their use as drainage channels.

THE INFECTION OF PHLEBOTOMUS ARGENTIPES FROM DERMAL LEISHMANIAL LESIONS. L. E. NAPIER, R. O. A. SMITH, C. R. DAS GUPTA and S. MUKERJI, Indian J. M. Research **21**:173 (July) 1933.

It was found possible to infect sand-flies by feeding them on tissues from depigmented lesions of postkala-azar dermal leishmaniasis. Subsequent feeding on clean mice increased the percentage of infections. The possibly important significance of this finding is discussed, particularly in regard to regions where leishmaniasis may be endemic or hypo-endemic.

CHAULMOOGRA OIL AND ITS DERIVATIVES IN THE TREATMENT OF LEPROSY. J. W. TOMB, J. Trop. Med. **36**:170 (June 15); 186 (July 1) 1933.

This article reviews many of the drugs used in the treatment of leprosy, with special reference to iodine and chaulmoogra oil.

After the administration of potassium iodide reactions of lepra occur in which the nodules, as well as the thickened cutaneous lesions, become swollen and inflamed,

while fresh crops of nodules appear. Fever accompanies this reaction. After the reaction subsides the nodules are smaller and the skin is thinner than before. As the leprotic foci are broken down the bacilli are set free and appear in the blood and the nasal discharges. While such reactions are not desirable, cases which become negative with potassium iodide therapy are less liable to relapse than those which become negative under treatment with chaulmoogra oil.

The various forms of chaulmoogra oil are described, and the results obtained by earlier investigators are given.

Part II deals with the ethyl esters, with references to the work reported by others, and the details of the administration of the drug are given.

THE SYMPTOMATOLOGY OF YAWS IN LIBERIA. G. W. HARLEY, J. Trop. Med. **36**:217 (Aug. 1); 235 (Aug. 15) 1933.

Following the opening of a new clinic in Liberia, nearly six thousand cases of spirochetal infection (presumably yaws) were collected and tabulated symptomatically in the hope of aiding in the differentiation between yaws and syphilis. There are seven cardinal symptoms: (1) palpable epitrochlears, (2) general pains in the bones and joints, (3) ulcers and scars, (4) lesions of the bones, (5) plantopalmar dermatitis, (6) changes in the nails and (7) lesions of the joints. The method of statistical tabulation is given in detail in parts I and II. The conclusions in brief are as follows:

The symptoms of the seven groups occur rarely in one person, but it is also comparatively unusual for only one symptom to be present.

The general tendency is for two or more symptoms to be present, with a distinct tendency to pyramiding, thus showing a clinical entity.

In advanced or active yaws two types were found, one of which was characterized by ulceration of the skin and the soft parts, the other, by involvement of the bone and rheumatic pains.

Parts of the skin which were subjected to constant friction showed structural changes in latent advanced yaws.

The last three types, however, overlap so thoroughly that they cannot be stated to represent separate entities.

JAMIESON, Detroit.

TOTAL ALOPECIA IN A PATIENT WITH NEURO-ENDOCRINE DISTURBANCES. G. BERTACCINI, Gior. ital. di dermat. e sif. **74**:225 (April) 1933.

The author reports in detail the case of a girl, aged 15, who had generalized alopecia. The patient had nervous symptoms pointing to lesions of the hypophysis and of the hypothalamic region.

HYDROA VACCINIFORME. E. G. SCOLARI, Gior. ital. di dermat. e sif. **74**:241 (April) 1933.

Two cases of hydroa vacciniforme were studied in detail. In both cases coproporphyrin and uroporphyrin were found in the urine within normal limits. Likewise, the protoporphyrin content of the red blood cells was normal. The experimental production of lesions of hydroa in one of the patients by means of exposure to the sunlight and the internal administration of sulphonal was not followed by abnormal elimination of porphyrin. After exposure to the sun, the white blood cells suffered the same changes observed in normal persons under the same stimulus. The red cells showed a decrease when lesions of hydroa were produced by exposure to the sunlight, but when the experiment was unsuccessful the red cells increased, just as in normal perons. The blood sugar, blood nitrogen and bilirubin were also increased when the sunlight succeeded in causing the development of experimental lesions. Exposure of one of the patients to ultraviolet rays failed to produce lesions of hydroa, even after sensitization with acriflavine hydrochloride. Treatment with

Finsen light under pressure was also unsuccessful. It is interesting to note that while the skin of the hands and face showed little reaction to the ultraviolet rays, the skin of the dorsum was quite sensitive to the same light.

EPIDERMOLYSIS BULLOSA. P. CERUTTI, Gior. ital. di dermat. e sif. **74**:335 (April) 1933.

This article is a report of five cases of epidermolysis bullosa, three of which were in brothers. In two cases hematoporphyrin was found in the urine. The article reviews the present clinical knowledge and the pathology and etiology of the disease.

ONYCHOMYCOSIS DUE TO MYCETORULA. L. CIAMROCCHI, Gior. ital. di dermat. e sif. **74**:415 (April) 1933.

A servant girl, aged 23, had paronychia and onychia of eight fingers of both hands. The nails were yellow; their surfaces presented numerous transverse furrows, and the surrounding tissues were inflamed and desquamating. Cultures were positive forty-eight hours after planting in Sabouraud's agar at an optimum temperature of from 16 to 20 C. The growth was creamy, thick, smooth and whitish. Radiating filaments developed after the first week, and the culture turned yellow as it grew older. Microscopically, these cultures showed round blastospores about 3 microns in diameter and a pseudomycelium with terminal chlamydospores. The fungus was classified as Mycetorula, a species considered nonpathogenic, and was individualized by the author under the name Mycetorula onychophila. The fungus was pathogenic for laboratory animals.

TREATMENT OF PSORIASIS WITH INJECTIONS OF SCALES SUSPENDED IN ALCOHOL. A. MARCOZZI, Gior. ital. di dermat. e sif. **74**:441 (April) 1933.

Ten patients with psoriasis were treated by the method recommended by Campbell and Frost. The author concludes that this treatment offers no advantages over other well known procedures.

PARDO-CASTELLO, Havana, Cuba.

EXPERIENCES WITH A SOLUBLE ARSPHENAMINE PREPARATION. F. KOGOJ, Dermat. Wchnschr. **96**:505 (April 15) 1933.

A series of patients with various stages of syphilis were treated with 3-acetylamino-4-oxybenzolarseno-4'-acetylamino-2'-phenoxyacetate sodium. This substance is provided in a solution that is suitable for intramuscular injection. The results of therapy were considered satisfactory, particularly in the early cases. There was an unusually large percentage of exanthems, though all of them ran a mild course.

CHEMOTHERAPEUTIC ACTION OF A SOLUBLE ARSPHENAMINE PREPARATION ON CHICKEN SPIROCHETOSIS AND ON HUMAN SYPHILIS. RICHARD WAGNER, Dermat. Wchnschr. **96**:577 (April 29) 1933.

The author conducted a series of experiments on chickens affected with chicken spirochetosis to determine the value of 3-acetylamino-4-oxybenzolarseno-4'-acetylamino-2'-phenoxyacetate sodium in 10 per cent solution suitable for intramuscular injection. He found that the organisms were rapidly eliminated from the blood stream following the administration of a dosage well within the toxic amount. The medicament did not, however, entirely sterilize the brain tissue, as was determined by the transfer of tissue to other animals. Intramuscular injections of the arsenical preparation protected the animal against infection for two weeks. The therapeutic index was found to be rather close to that of neoarsphenamine.

In human beings with syphilis the drug caused a rapid disappearance of the spirochetes from the primary lesions and was well borne. Further experience is necessary before its proper place in the treatment of human beings with syphilis can be determined.

So-Called Parapsoriasis Acuta (Pityriasis Lichenoides et Varioliformis Acuta). L. N. Maschkilleisson and M. S. Posin, Dermat. Wchnschr. **96**:605 (May 6) 1933.

The term parapsoriasis includes dermatoses of different etiology and pathogenesis. These are often similar in only a few morphologic details. So-called acute parapsoriasis differs in many respects from the other members of the group. In one case observed by the authors the eruption followed an attack of grip and ran a course of eight weeks. The tuberculin reaction was weakly positive. It seems likely that acute parapsoriasis is of infectious origin.

Granuloma Telangiectaticum in South Baden. Julius Petri, Dermat. Wchnschr. **96**:649 (May 13) 1933.

A statistical study showed 112 cases of granuloma telangiectaticum in the Freiburg clinic between 1921 and 1932, during which period 25,000 patients were seen. This morbidity, 0.5 per cent, is rather close to that found in other German clinics. Of the 112 patients, 60.7 per cent were males. Of the female patients, 14 were pregnant, indicating an increased tendency toward the development of these lesions. In most instances the probability was established that trauma was the determining factor in causing the granuloma. Histologic examination showed a marked decrease in elastic tissue. The author found a close histologic resemblance to granuloma telangiectaticum tropicum but no resemblance to either verruca peruviana or Masson's angioneuroma.

Inoculation with the Patient's Own Sputum to Identify the Virus of Herpes. H. Hruszek, Dermat. Wchnschr. **96**:677 (May 20) 1933.

An attempt was made to establish the presence of the herpes virus in the sputum of a considerable number of patients who had either recurring herpes or occasional attacks. In fourteen instances the inoculation was made on the lips and in nineteen on the arm. No positive results were obtained.

A Case of Naevus Syringocystadenomatosus Papilliferus (Werther). Alfred Fessler, Dermat. Wchnschr. **96**:680 (May 20) 1933.

The case of a 27 year old woman who had a hard nodule the size of a hazelnut just above the knee is reported. The nodule had been present for three or four years and was increasing gradually in size. It was excised; the preoperative diagnosis had been fibroma. Microscopic examination showed a papillary cystic growth which had apparently arisen from the sweat glands. It corresponded closely to the description by Werther of naevus syringocystadenomatosus papilliferus.

Tic as a Result of a Muscular Gumma. N. Szenderowicz, Dermat. Wchnschr. **96**:708 (May 27) 1933.

A man, aged 42, with a gumma of the forearm, was observed. There was an associated tic of the head, which disappeared under antisyphilitic therapy.

Effect of Malarial Treatment on Neurosyphilis (The Possibility of Demonstrating the Effectiveness of Treatment by Means of the Epinephrine Probe Test). O. Muck, Dermat. Ztschr. **66**:129 (April) 1933.

Twenty-five patients with neurosyphilis were submitted to the epinephrine probe test. All reacted with the white line, indicating a pathologic condition of the

sympathetic nerve supply. These patients received a course of malarial treatment, and the test was repeated. In 60 per cent a normal reaction occurred, and only seven showed no change.

(The test consists of inducing ischemia of the anterior portion of the inferior turbinate by means of a spray of a 1:1,000 dilution of epinephrine. A line is then drawn over the ischemic area three or four times by a probe, with moderate pressure. In normal persons the entire area becomes hyperemic, but after one or two minutes the hyperemia is localized to the line stroked, and this line remains for from two to fifteen minutes. In certain pathologic conditions of the brain the line becomes white and remains so after the ischemia has cleared. Arnsson and his associates called this reaction "mucographia alba.")

TELANGIECTASIA HAEMORRHAGICA HEREDITARIA (OSLER). WILHELM RICHTER, Dermat. Ztschr. **66**:137 (April) 1933.

Typical hereditary hemorrhagic telangiectasia developed in a woman, aged 27, following the sudden cessation of the menses due to a severe nervous shock. During the course of the disease exophthalmic goiter, amyotrophic lateral sclerosis and a trophic ulcer of the leg developed.

SCLEROPOIKILODERMA. PHILIPP KELLER, Dermat. Ztschr. **67**:14 (July) 1933.

The author observed a woman with progressive scleroderma associated with poikiloderma. The clinical picture coincided with that previously described by Jaffé as scleropoikiloderma.

TAUSSIG, San Francisco.

DIAGNOSIS OF LATENT CONGENITAL SYPHILIS. OLGA VALENTOVÁ and JAN OBRTEL, Česká dermat. **13**:221 (Dec.) 1932.

This is a further report on the work done at the Prague Institute for the treatment of hereditary diseases of the blood. Two hundred and twenty-six children underwent a thorough physical and serologic examination with five standard methods, of which Meinecke's second modification proved the most dependable. The intradermal luetin test was applied in all cases, with the result that two reactions were found to be strongly positive and thirteen weakly positive in children who had been considered cured. Control tests made one and a half years later showed the effect of treatment on the reaction: It was weaker in most cases and stronger in two cases. Control tests made on untreated children one and a half years later showed that time alone may cause a change in the degree of the reaction.

VARIOUS FUNCTIONS OF THE SKIN AND THEIR DISTURBANCES. F. ŠAMBERGER, Česká dermat. **14**:3 (Jan.) 1933.

The first part of the article deals with the special physiologic functions of various components of the skin and shows how these functions may furnish the basis for pathologic changes in the skin. The second part deals with the vegetative physiologic function of the individual cells, which is so far little understood. The deviation from the normal vegetative function may lead to the formation of tumors and to hypertrophy, atrophy, degeneration and death of the cells. The knowledge of the physiology of the individual cells enables one to understand the pathogenesis of diseases of the skin and might furnish a basis for the classification of such diseases on a pathogeneticovitalistic ground.

Society Transactions

SAN FRANCISCO DERMATOLOGICAL ASSOCIATION

Feb. 17, 1933

E. K. STRATTON, M.D., *Chairman*

PERIADENITIS MUCOSA NECROTICA RECURRENS. Presented by DR. N. N. EPSTEIN.

B. W., a white man, aged 43, entered the University of California Out-Patient Department on Jan. 25, 1933, complaining of ulcerations of the buccal surface of his mouth, tonsillar region, tongue and lower lip. Similar lesions were also present on the scrotum.

The condition has been present for four years. At no period has the patient been entirely free during this time.

A severe flare-up of the condition has occurred during the past two months. The patient states that each lesion has a definite course, undergoing spontaneous involution within one month. New lesions appear as others heal. The lesions vary from 0.5 to 1.5 cm. in diameter. They are discrete, with an intense areola around them, and a central necrotic ulceration. They are quite painful. There are many scars in the mouth and tonsillar areas, with considerable alteration of the normal structure. There are scars on the lower lip as well. The condition on the scrotum is quite similar, with active lesions and scars. The active lesions, however, are more superficial.

Physical examination otherwise gave entirely negative results. The Wassermann and Kahn tests were negative. Urinalysis gave negative results. Biopsy on an active lesion of the tongue showed an acute inflammatory process.

The patient is receiving a therapeutic test for syphilis without definite benefit.

DISCUSSION

DR. N. N. EPSTEIN: This disease, described a few years ago, is apparently more common in the clinic. It seems to me that it will have to be divided into groups. There is the familial type. Recently, we have seen a number of patients similar to this one. The process develops in adult life rather than in childhood.

We know nothing about the etiology of the disease, but one might think that it is due to some sort of vitamin deficiency. We had a severe case in a young woman, that cleared up when she was put to bed and given proper nourishment and diet.

This patient is a morphine addict. He certainly has not had a proper diet, owing to his economic condition. This is the most severe case, as far as scarring is concerned, that I have seen. Pathologically, there is nothing specific. The dense infiltration consists mainly of polymorphonuclear cells. Some have broken up, and some necrosis has taken place.

DR. MERLIN MAYNARD: These ulcerations are like agranulocytic angina. I wonder whether a study of the white blood cells has been made.

DR. N. N. EPSTEIN: In all the cases we have had there has been nothing to indicate a blood dyscrasia of any sort.

A Case for Diagnosis. Presented by Dr. C. E. Schoff.

C. T. Y., a Chinese, aged 24, has a family history and a past history that are unimportant. More than one and one-half years ago cutaneous lesions developed over both legs, consisting of small pimples discharging "pus;" the condition was diagnosed as eczema. The lesions cleared up in a short time, but about a week later he noticed that his back was becoming stiff, causing him to bend and move slowly. There was no pain associated with the stiffness, only a slight, burning sensation on prolonged standing. This condition continued for about six months, and then subsided. There followed several weeks of freedom from all symptoms. Then his right thumb became stiff, burned intensely and swelled, turned red and began to discharge pus from a sinus. This has continued practically unchanged up to the present time. Shortly after the right thumb was involved, similar discharging sinuses developed on the neck, the ankle and the right wrist. These, however, have all subsided spontaneously and healed, except for the one on the ankle which still discharges a very small amount of pus.

The right thumb is swollen and dusky red. There are two discharging sinuses over the first phalanx. Yellow pus is exuding from these sinuses. The thumb has a boggy feel and is not very painful. The left wrist shows a large scar on the anterior aspect at the site of a healed sinus. The right ankle had a similar scar, but there is a small crust over a small residual sinus, from which comes a slight discharge. No involuntary movements, paralysis, wasting, trauma or pathologic reflexes are present. The physical condition otherwise is essentially normal.

Roentgenograms showed a destructive process involving the upper border of the right sacro-iliac joint, with extensive hypertrophic changes about the lower part of the lumbar spine. Urinalysis showed negative results, and the blood was normal.

The infected thumb was amputated. The tissue showed granulation, with infiltration of plasma cells, lymphocytes and polymorphonuclear cells, and a few giant cells. No organisms were seen, and the cultures were negative. The findings are only suggestive of tuberculosis.

Curettings from the sinus of the right malleolus showed the same picture. Inoculations into guinea-pigs were made with this material.

DISCUSSION

Dr. C. E. Schoff: This case was presented because of an unsatisfactory effort to make a diagnosis. I think that your first impression was probably the same as mine: coccidioides. By going into the study of roentgen findings and bone pictures one might be further convinced that the condition is coccidioides of the bone. The history in the case, the man's occupation, the duration and the character of the onset might also bear out that diagnosis.

As the patient had been in Stanford Hospital, Dr. Alderson and Dr. Way are familiar with the case, and would, perhaps, open the discussion. I present the case undiagnosed, as we have been unable to demonstrate an organism.

Dr. Stuart Way: Dr. Newell (roentgenologist) recently discussed this case with me. He reviewed the findings and is certain that it is not tuberculosis. Giant cells are present, but they are not the type found in tuberculosis. There are well circumscribed collections of lymphocytes and areas of necrosis. The corium is deeply involved, and I believe that the picture is not one of tuberculosis histologically. I should suggest the possibility of a deep mycotic infection of some type not as yet identified.

NEW YORK ACADEMY OF MEDICINE, SECTION OF DERMATOLOGY AND SYPHILIS

LOUIS CHARGIN, M.D., *Secretary*

Regular Meeting, March 7, 1933

A. BENSON CANNON, M.D., *Chairman*

ACANTHOSIS NIGRICANS. Presented by DR. MAX SCHEER.

This woman, aged 30, born in Ireland, has an eruption over the axillae, the forearms, an operative scar and the umbilical and genital regions. There is thickening of the skin, accompanied by verrucous, grayish-yellow to brownish-black excrescences in these locations. The patient was operated on for carcinoma of the stomach on Feb. 25, 1931. At that time there was a supraclavicular node the size of a walnut on the left side. Biopsy confirmed the clinical diagnosis of acanthosis nigricans.

DISCUSSION

DR. ADOLPH ROSTENBERG: This case presents a classic form of acanthosis nigricans which is so rarely seen. It has all the earmarks of the disease. The patient also had a carcinoma of the stomach.

ACRODERMATITIS (?). Presented by DR. HERMANN FEIT.

This woman, aged 40, first noticed a bluish-red discoloration on the distal parts of the fingers about seven weeks ago. At the same time similar areas began to appear on the elbows, knees and feet. One week later the eruption had spread over the backs of both hands to the wrists. There is no pain or sensory disturbance in the affected areas, except for a slight burning sensation. On examination, the skin on the backs of both hands, including the wrists, showed yellowish-red discoloration with a brownish tinge over the joints. The skin was swollen, showed no elasticity and was considerably wrinkled. There seemed to be slight edema of the cutis. The palms and soles showed slight thickening and redness. The anterior halves of the feet were affected in the same way as the hands. The olecranons and knee caps showed circumscribed areas of thickening and redness about the size of a half dollar, which were surrounded by slight erythema. The patient says that she has taken no physics, tonics or other drugs. Her diet apparently has been well balanced. The family history is irrelevant. The Wassermann reaction was negative. The results of biopsy have not yet been reported.

DISCUSSION

DR. LOUIS CHARGIN: I should like to offer a diagnosis which, it seems to me, better fits the clinical aspect presented by the patient. The keratosis of the palms and soles, the color and the scaling suggest pityriasis rubra pilaris, perhaps still in the early stage. I think that the course will justify that diagnosis.

LEUKEMIA CUTIS ASSOCIATED WITH LYMPHATIC LEUKEMIA. Presented by DR. CHARLES WOLF.

This man, aged 67, was admitted to the hospital in November, 1931, with a history of weakness and fatigue for the past two or three years. He noticed enlarged inguinal nodes six months prior to admission. In the past week he had noticed enlarged nodes in the axillae and the inguinal and cervical regions. There had been diarrhea for three weeks.

Physical examination showed hepatosplenomegaly, generalized lymphadenopathy and poor oral hygiene. Otherwise there were no abnormalities. The blood count

showed 84 per cent hemoglobin, 3,700,000 red cells, 154,400 white cells, 4 per cent polymorphonuclears, 96 per cent lymphocytes (small) and 170,000 platelets. The blood pressure was 130 systolic and 60 diastolic.

Roentgen examination of the chest on Nov. 23, 1931, showed no abnormality in the lungs; the bronchial lymph nodes were moderately enlarged. Roentgen treatment was started on December 7. In November, 1932, the blood counts showed from 97,000 to 172,000 white cells. The last count, taken on Feb. 27, 1933, showed 201,000 white cells and a hemoglobin count of 75 per cent.

In the past five months the patient has noticed an eruption on the forearms, the chest and the upper part of the abdomen, which is accompanied by itching. On examination, the lesions were pinkish yellow, firm, shiny and slightly raised. They varied in size from that of a pinhead to that of a split pea and were discrete.

On Nov. 27, 1932, biopsy of tissue taken from the right outer canthus and the right clavicular region revealed "lymphadenosis cutis."

Roentgen treatment, applied to the axillae, was begun on Jan. 23, 1933.

DISCUSSION

DR. CHARLES WOLF: This man has been treated for two years in the radiotherapy department for lymphatic leukemia. Until seven or eight months ago he had not manifested any cutaneous lesions. At that time the nodular infiltrations seen today started to develop. Roentgen therapy has been applied to the glandular enlargements, without any appreciable effect on the blood picture. The lesions are isolated, infiltrated, shiny papules which itch. They are situated on the anterior aspects of the forearm, with a few on the face. Two biopsy specimens were examined, one from the right side of the face and one from the supraclavicular region. A diagnosis of lymphadenosis was made.

DR. HOWARD FOX: In my experience, cases of true leukemic infiltration in the skin, like the one presented, are rare. Leukemia, even without cutaneous manifestations, is uncommon.

DR. ISIDORE ROSEN: I am glad that this case was presented. Patients with this type of disease are rarely shown at clinical sessions but are mostly seen in hospital wards. In my experience one seldom sees scratch marks on the skin in leukemia or in other forms of lymphoblastoma despite the fact that patients with these conditions complain of severe itching.

DR. ADOLPH ROSTENBERG: Dr. Wolf said that these lesions did not yield to roentgen therapy. I am surprised at that, because ordinarily such lesions yield readily to roentgen treatment.

DR. E. WILLIAM ABRAMOWITZ: I agree with the diagnosis. This is a very characteristic case. One sees other types of lesions, such as nodular and hemorrhagic manifestations, in association with leukemia of the skin.

DR. WALTER J. HIGHMAN: There seems to be some confusion as to terms. I agree with Dr. Rosen's remarks in connection with Dr. Fox's impression. I have seen this type of case frequently. Dr. Lustgarten, who was keen at recognizing cases of this kind, would have called the condition prurigo lymphatica.

Prurigo lymphatica is a true leukemic infiltration related to that form which at a distance looks like dermatitis herpetiformis. These lesions are not leukemids. Leukemids, as Audrey used the term, are toxic prodromal eruptions that are suspected retrospectively of having been related to leukemia, if the latter condition subsequently develops. The term "leukemia," I believe, is redundant.

DR. CHARLES WOLF: I did not have reference to the lesions themselves when I said that roentgen therapy produced no appreciable effect.

PSORIASIS IN A FULL-BLOODED NEGRO. Presented by DR. LOUIS CHARGIN.

H. R., a full-blooded Negro, aged 29, says that he had gonorrhea nine years ago, but that he has never, to his knowledge, had a syphilitic infection. He is married and is the father of one child. He says that his wife has never had any miscarriages.

His present trouble appeared two years ago. The eruption was then limited to the hairy portion of the scalp and the adjacent area of the forehead. The attack lasted four or five months and then disappeared following the use of a "mange cure." The present attack occurred about six months ago. The eruption appeared first on the scalp and almost immediately afterward on the trunk, the arms and the upper parts of the legs. It has progressed slightly, new lesions appearing here and there.

Examination showed a more or less generalized eruption, chiefly confined to the scalp and the adjacent part of the forehead, the cheeks and chin in the bearded region, the chest, the abdomen, the back, the arms and the upper parts of the legs. There were scattered areas on the lower parts of the legs. The elbows, knees, palms and nails were not affected. The lesions were papular, varied in size up to that of a dime, and occurred both singly and in small and large patches. They were dry and scaly. The scales were characteristic of psoriasis, especially where they were undisturbed by treatment. The patient had been applying petrolatum and had taken baths frequently, and many lesions were free from an imbricated scale. The Wassermann and Kline tests were negative.

DISCUSSION

DR. HOWARD FOX: Psoriasis in Negroes is rare only in those of full blood, and I am inclined to doubt from this patient's appearance that he is of full blood.

DR. LOUIS CHARGIN: I have inquired as to whether the patient is a full-blooded Negro; according to him, his parents and grandparents were of full blood. I think there can be no doubt but that he has psoriasis.

DR. SIGMUND POLLITZER: I think that this man is certainly not a full-blooded Negro.

LYMPHOBLASTOMA (HODGKIN'S TYPE?). Presented by DR. LOUIS CHARGIN.

This patient was presented before the section on Nov. 5, 1919, at which time the diagnosis was prurigo lymphatica.

After a few fractional doses of roentgen rays had been applied to the lesions, the patient disappeared from observation and remained away until five weeks ago. In the interval he had practically no treatment of the cutaneous lesions. He stated that in the course of time the original eruption disappeared, and that he had remained fairly well until recently. Several months previously the lymph glands in the left axillary region became enlarged and an eruption developed on the trunk. When reexamined on Jan. 23, 1933, the patient showed enormous enlargement of the lymph glands in the left axilla and generalized but less marked adenopathy in all other regions of the body. On the trunk there were many edematous, small and large infiltrations, scattered papular lesions, rather small and skin-colored, numerous scattered superficial scars at the sites of former eruptions and macular atrophic areas, evidently following in the wake of former nodular lesions. The patient complained of itching. General examination at that time showed the heart to be slightly enlarged and the spleen palpable; otherwise the findings were negative.

Following the removal of glandular tissue and skin for pathologic study, the eruption disappeared in several days. This was very striking. It has recurred since, but shows a tendency to be evanescent. A section of the glandular tissue showed a picture that was not characteristic, but the presence of many eosinophils and of sporadic histiocytes with large nuclei strongly suggested Hodgkin's disease. A section of the skin showed marked edema throughout the cutis. In the edematous areas there were many swollen fibroblasts and eosinophils. There were a few plasma cells and histiocytes.

The blood picture was strikingly similar to that noted thirteen years ago. The count showed: white cells, 21,800; nonsegmented polymorphonuclears, 5 per cent; segmented polymorphonuclears, 46 per cent; eosinophils, 34 per cent; lymphocytes, 13 per cent; monocytes, 2 per cent; reticulocytes, 0.5 per cent; red cells, 5,450,000; hemoglobin, 90 per cent, and platelets, 320,000.

DISCUSSION

DR. LOUIS CHARGIN: Two years prior to the first presentation of the patient, in 1919, an eruption developed, which consisted of skin-colored papules and nodules as well as infiltrations. There was an accompanying adenopathy. The patient was presented with the diagnosis of prurigo lymphatica, with which the discussers agreed. A diagnosis of leukemia or Hodgkin's disease could not be established. The patient disappeared from observation until recently. He states that as time progressed the eruption present thirteen years ago disappeared. Recently he suffered a recurrence of the eruption, and there has been a marked increase in the adenitis. A section of a gland suggested Hodgkin's disease very strongly. The blood picture is now practically identical with that observed thirteen years ago. In addition to infiltration, the patient now shows macular, atrophic spots, evidently at the sites of former lesions.

DR. ISIDORE ROSEN: This patient is interesting to me because of his good physical condition in spite of the fact that he has not been treated and that he has an abnormal blood picture which has remained unchanged for twelve or thirteen years. Another interesting feature is the large number of atrophic areas at the sites of previous edematous urticaria-like lesions.

DR. WALTER J. HIGHMAN: I was evidently wrong thirteen years ago. I am just as likely to be wrong now, though I am older. The condition either is Hodgkin's disease or is not. If it is not Hodgkin's disease, one may suspect what other disease it is. I think that the histologic picture, as described by Dr. Klemperer, strongly indicates that it is Hodgkin's disease.

DR. LOUIS CHARGIN: The macular atrophic spots which the patient now presents are secondary, following nodules and infiltration of the skin.

FOREIGN BODY TUMOR (PARAFFINOMA). Presented by DR. EUGENE TRAUB.

This man, aged 35, an Italian, first presented himself at the clinic of the Stuyvesant Square Hospital on March 3, 1933, because of an ulcerating condition on his leg. He stated that fifteen years previously he had been shot in the leg; the wound was merely a flesh injury, the bone not having been damaged. In order to prevent being returned to the front again, he injected liquid petrolatum into his leg. For the past few years these masses of oil have begun to grow, some of them breaking down and ulcerating, as can be seen. Others have healed spontaneously with only treatment at home. No laboratory work has been done. The patient is presented for therapeutic suggestions.

DISCUSSION

DR. E. WILLIAM ABRAMOWITZ: It has always been taught that these tumors are produced only with mineral oils. In the last few years, cases have been reported of tumors resulting also from the use of vegetable oils. Oily suspensions or solutions of drugs should be given intramuscularly rather than subcutaneously, as the latter are more apt to cause irritation and the formation of foreign bodies.

DR. SIGMUND POLLITZER: When I began to use oily suspensions of mercury in the nineties of the last century, it was the common practice to use liquid petrolatum on the theory that it was aseptic. Liquid petrolatum is a liquid paraffin. I do not think anything can be done for this man.

DR. JOSIAH THORNLEY: I should like to supplement what Dr. Abramowitz has said by a personal experience. In France, during an operation, some camphorated oil was, I believe, injected into one of my arms. As a result I have a lump there today. Whether the injected substance was a vegetable oil or not I do not know, but I have a paraffinoma that has existed for fifteen years.

DR. A. BENSON CANNON: During and immediately following the World War, European observers reported many cases of paraffinomas due to wax or paraffin in petrolatum. Because of the prevalence of these thickened warty growths or

ulcerated surfaces giving the appearance of tuberculosis verrucosa cutis or of blastomycosis, physicians in Vienna usually signify "American" liquid petrolatum when prescribing it.

DR. SIGMUND POLLITZER: My experience is that pure olive oil is harmless. Olive oil frequently contains free acid and may under certain circumstances give rise to indurations, but I believe that they occur only when the injected suspension is deposited in the subcutaneous tissue.

DR. EUGENE TRAUB: These patients have been treated by roentgen radiation, not with the idea that it has any influence in doing away with the paraffin in the tissue, but because it sometimes allays inflammation about the small masses of paraffin and in this manner reduces the size of the tumors.

GUMMA. Presented by DR. MAX SCHEER.

This patient was previously presented before the section in December, 1932.

DISCUSSION

DR. WALTER J. HIGHMAN: Originally Dr. Scheer made a diagnosis of syphilis in this case; he instituted antisyphilitic treatment, and the patient improved. Microscopic examination of two specimens from the lesions excluded epithelioma. Nevertheless, clinically, in spite of the results of all former studies, the lesion at present looks malignant.

DR. SAMUEL PECK: After examination of the first specimen that was taken, my associates and I made a diagnosis of syphilis (gumma). On the basis of the second specimen, taken from the edge, we could not make a diagnosis of carcinoma. There was some epithelial hyperplasia but no suggestion that the lesion was developing into an epithelioma. It has advanced and changed since I saw it. The edge now seems more definitely infiltrated. Another biopsy specimen should be taken.

DR. EUGENE TRAUB: From a clinical standpoint the important thing about this lesion is that it involves the entire center of the tongue. A late syphilitic lesion, a gumma, would limit itself to one side of the median raphe and when increasing in size would bulge to the other side without actually involving it. For this reason alone I should rule out syphilis as the main etiologic factor in the lesion as it appears now.

DR. E. WILLIAM ABRAMOWITZ: If this lesion is a pure gumma, it is not so apt to be malignant. If a syphilitic ulceration has been treated and shows steady and rapid improvement and then remains stationary or increases in size, it is probably malignant. Malignancy is suspected in this case. The biopsy specimen may not have been taken deep enough or in the right spot. I think another biopsy is in order. If malignancy is disclosed, the patient's life may be saved or prolonged. If the lesion is not malignant, no harm has been done by this procedure.

DR. A. BENSON CANNON: The lesion does not look like a gumma to me. Gummas of the tongue usually have the characteristic appearance of a swollen, red and edematous lesion with central ulceration, formation of sinuses and sloughing, and a bright red area surrounding the ulcer. I think that the sharply demarcated, red, granular ulceration with the hard, raised border without any evidence of surrounding inflammation is more suggestive of carcinoma, or possibly of tuberculosis.

DR. CHARLES WOLF: Before treatment, there was a deep, sharply marginated ulcer, which was a gumma. At the present time there is complete healing, and a diagnosis of carcinoma cannot be made clinically or pathologically. I think that the man should be observed carefully and that at the first indication of infiltration or ulceration another biopsy should be performed.

ERYTHRODERMIA PSORIATICA WITH FORMATION OF FIBROMAS. Presented by DR. LOUIS CHARGIN.

This woman was formerly presented by Dr. Oscar Levin with a condition diagnosed as nodular psoriasis. She now shows generalized erythrodermia with scaling. On the legs are many large nodules which are mostly cutaneous. On the face and shoulders as well as on the body there are a number of pea-sized nodules which clinically appear to be fibromas. These small nodules appear constantly and itch a great deal. There is a similar lesion on the mucosa of the left cheek.

Examination of the urine showed occasional red blood cells and albumin. Arsenic was not found. The blood chemistry showed: urea, 8 mg. per hundred cubic centimeters of blood; sugar, 70 mg.; cholesterol, 310 mg.; cholesterol esters, 188 mg., and calcium, 8.8 mg.

Several biopsy specimens from the legs and the shoulders showed typical psoriasis. Several of the nodules were examined; they presented the histologic picture of fibromas lifting up a psoriatic epidermis.

The roentgenogram of the wrists showed slight atrophy of the bones with marked swelling of the soft tissues, particularly about the right wrist. There was atrophy of the bones of the left ankle, with irregularity of the cortex of the lower fibula.

The Wassermann reaction was negative.

ERYTHRODERMIA PSORIATICA (UNIVERSAL PSORIASIS). Presented by DR. SAMUEL PECK.

This woman, aged 43, has been under observation at the Mount Sinai Hospital for twenty-two years because of typical psoriasis which has run an ordinary course with recurrences and remissions. In July, 1931, after an accident, the eruption became generalized. She last received arsenic twelve years ago.

On examination, the patient presented a generalized, erythematous, scaling eruption. The palms and soles were free. The skin of the involved areas, including the scalp, showed marked redness, some infiltration and a covering of grayish-white scales. There was little normal skin to be seen. On the face and the chest the eruption resembled an ordinary desquamating erythrodermia, while on the legs it presented the picture of giant patches of psoriasis. The glands were not enlarged.

Examination of the urine showed no arsenic.

A specimen was removed from the skin of the leg for microscopic examination. It showed the typical histologic picture of psoriasis.

DISCUSSION

DR. SIGMUND POLLITZER: On what is the diagnosis of psoriasis based in this case of generalized erythrodermia? Of course the erythrodermia may be secondary to psoriasis. I should say on casual inspection that the condition is erythrodermia of unknown cause, but why should one consider it psoriasis?

Though it seems rather risqué, I cannot help entertaining the suspicion that this may be a case of mycosis fungoides. In the ordinary casual histologic examination one might overlook evidences of mycosis fungoides. There is the famous case of the "red man" who spent several years in the Hôpital Saint Louis in about 1889-1890, who at first showed nothing but this type of red skin. After several years of observation, however, mycosis fungoides developed.

DR. HOWARD FOX: One frequently sees cases of universal scaling erythrodermia clinically similar to those presented. A diagnosis as to the nature of the disease is usually impossible. In many cases, there is general adenopathy, and histologic examination of excised glands shows only simple inflammatory changes. The blood picture is also normal as a rule. In the terminal stages, however, lymphatic leukemia may be shown by examination of the blood. In a similar case

under my observation at present in Bellevue Hospital, there has been only moderate adenopathy but recent examination of an excised gland showed the picture of Hodgkin's disease.

DR. SAMUEL PECK: Dr. Chargin is presenting the case as one of erythrodermia psoriatica. Montgomery, in his excellent summary of the histologic changes in these cases, emphasized the fact that the pathologic picture is typical of psoriasis. I showed Dr. Pollitzer slides from Dr. Chargin's case, and we agreed that a diagnosis of psoriasis could easily be made. Biopsy on the nodules from the legs, as well as on those from the forehead and cheeks, showed a typical fibroma, lifting up typical psoriatic epidermis.

DR. JOSIAH THORNLEY: It is well known that in women suffering from psoriasis the condition may clear up during pregnancy and then recur following delivery. At Gouverneur Hospital my associates and I propose to attempt the following method of treatment: the intramuscular injection of 10 cc. of whole blood obtained from a normal pregnant woman into the buttocks of a psoriatic patient. Before putting this plan into action I should like to ascertain whether this method of treatment has been tried by any one else. I have been unable to get any definite information. Maybe some member of the section can help me.

DR. WALTER J. HIGHMAN: I have seen some women with psoriasis who got better during pregnancy and others who became worse. I do not think there is anything in the idea. I know of no one who has tried the method of treatment suggested by Dr. Thornley. Leaving out of consideration primary erythrodermia, and talking only of secondary erythrodermia, I think that the disease is conditioned by a peculiarity of the individual patient. Chronic scaling eruptions, such as eczema, psoriasis and parapsoriasis, irrespective of the underlying cause, lead to erythrodermia. Confusion exists between erythrodermia and diseases of the reticular lymphatic system. The eruptions preceding mycosis and Hodgkin's disease resemble chronic eczema, psoriasis and erythrodermia, among other infections. It has never been decided whether these eruptions are characteristic of lymphatic disturbances from the start or are simply banal dermatitides ending in mycosis, for example. It is not clearly understood whether they end in mycosis, Hodgkin's disease or a kindred disease. When such a case is presented before a group like this, the suspicion that the condition may be erythrodermia or early mycosis is always mentioned by some one. Dr. Pollitzer will remember the case reported by Dr. Flagg; for years mention of it would throw any dermatologic society into two camps as to whether the condition was parapsoriasis or early mycosis, not recognized. I am afraid it is as idle to express prophetic opinions on this subject now as it was twenty years ago. I think that the tendency toward erythrodermia is common.

DR. SAMUEL PECK: The skin can respond to an inflammatory process in a limited number of ways, even with varied etiologic agents. Various combinations of these inflammatory responses often give a diagnosis. While individual predispositions must be considered, this fact must be borne in mind.

DR. LOUIS CHARGIN: From the clinical standpoint alone, there may be difficulty in diagnosing this condition, but with the aid furnished by a study of sections of the skin, the diagnosis becomes comparatively easy. Former and recent pathologic studies by Goeckerman and Levy and by Montgomery demonstrate a uniform picture which is characteristic. A recent study of sections of nodules from the patient whom I presented here demonstrated a psoriatic picture over a fibrous formation, in order words, a fibroma with a psoriatic cap.

DERMATITIS VEGETANS. Presented by DR. F. C. KEIL.

This man, aged 58, born in Russia, a tailor, for the past six months has noticed a growth in the anal region, which started as a small area and gradually increased to its present size. There has been some pain, perhaps more from mechanical causes than spontaneously. Occasionally there has been slight bleed-

ing. There had been no previous hemorrhoids. The patient has lost several pounds (from 5 to 7 [2 to 3 Kg.]) in the past few months, but otherwise has been in fairly good health. He has never complained of weakness. For the past twenty-three years he has been constipated. There is a definite history of attacks of migraine in the patient as well as in two of his children.

On the patient's admission to the hospital, the lesion was the size of a dollar and markedly verrucous and had an indistinct border. At the upper edge, it gave the impression of undermining, but this was probably due to the protrusion of granulations. The growth extended as far as the sphincter. There were no subjective symptoms except those of mechanical origin.

Biopsy on a specimen taken from the edge of the upper angle was reported to show "chronic and acute nonspecific inflammation." There was no evidence of tuberculosis or blastomycosis.

The Wassermann reaction was negative; the von Pirquet test was moderately negative. The urine was normal.

The lower angle has been cauterized with silver nitrate several times with excellent results. The entire lesion seemed greatly improved with the institution of scrupulous cleanliness, special attention being given to the anal region. The lesion has been observed for about six weeks.

DISCUSSION

DR. ISIDORE ROSEN: I do not believe that the condition is dermatitis vegetans. The question of tuberculosis and the possibility of malignancy must be considered seriously. I suggest that the presenter make further histologic studies with this diagnosis in mind.

DR. SIGMUND POLLITZER: It is possible that this condition is beginning pemphigus vegetans. I have seen pemphigus vegetans begin in this way at the anus.

DR. MARION SULZBERGER: Any lesions in intertriginous areas will be altered by secretion and maceration. Still, the appearance of the lesion here suggests a form of senile tuberculosis, the tuberoserpiginous type, described by J. Jadassohn.

DR. LOUIS TULIPAN: I think that the lesion is a granuloma. The borders are infiltrated, extending into the anal fold. From the infiltration of the border and the base, with the hypertrophied granulation tissue, it would appear that it is an epithelioma.

DR. F. C. KEIL: At the upper angle of the lesion, there seems to be some undermining, which suggests the original diagnosis of tuberculosis. On the other hand, the presence of a relatively firm border suggests carcinoma. There are no palpably abnormal inguinal glands. The patient has been constipated for twenty-three years, a point against intestinal tuberculosis. A biopsy specimen taken from the extreme edge of the upper angle, including the border, shows only acute and chronic nonspecific inflammation. Another biopsy will be made, however.

DR. E. WILLIAM ABRAMOWITZ: Was rectal examination made? I have seen only a few cases of cancer of the perianal area, and all were associated with cancer of the lower bowel.

DR. F. C. KEIL: Rectal examination was made. It showed nothing abnormal except a slightly enlarged prostate gland.

FAVUS. Presented by DR. LEWIS BYRNE ROBINSON.

This patient, a white woman, aged 19, of Dutch descent, born in the United States, had an eruption on the scalp at the age of 2 years. A few years later the scar was noticed. The patient's mother had a similar condition during childhood, which disappeared at puberty. The patient's aunt had a severe eruption on the scalp.

On examination, there was an irregular area of superficial scarring in the midparietal region. On the border of the scar there were some crusts which

could be easily lifted out and which left slightly depressed erosions. There were several small scars scattered over the scalp. Examination of the hair and crusts revealed fungi (typical Achorion schoenleinii).

DISCUSSION

DR. MARION SULZBERGER: A patient of Dr. Wise's and mine, the wife of a physician, had a patch on her scalp of many years' duration. It was the size of a twenty-five cent piece and was covered with scales which were difficult to remove. They left little bleeding marks. The patient was born in Russia. I thought I detected a "mousey" odor. Many excellent dermatologists had made a diagnosis of psoriasis. Microscopic examination revealed fungi, and cultures from the hairs and from the scales showed them to be Achorion schoenleinii. In consideration of this case, which I observed, and what I have read in the literature and in consideration of the fact that Achorion was grown in the case presented, I think that the condition is probably one of those peculiar types of favus that remain in one area for a long time.

IDIOPATHIC MULTIPLE HEMORRHAGIC SARCOMA (KAPOSI). Presented by DR. DAVID BLOOM.

This man, aged 40, an American Jew, presents irregular, violaceous patches on the lateral aspects of both feet. On examination, there were similar pigmented lesions on the dorsa of the first four toes, the skin of which was somewhat thickened, and on the dorsa of the feet and hands, involving the fingers. The lesion on the right elbow was removed for microscopic examination and presented ill defined, violaceous papules on purplish skin. The past history is unimportant, and general examination gave essentially negative results.

DISCUSSION

DR. SIGMUND POLLITZER: In looking at the patient, I am struck by the absence of evidence of Kaposi's sarcoma. There is no infiltration. There is a little patch of redness on the foot, which seems insignificant, and that is all. I should never have thought of Kaposi's sarcoma in connection with this case. The histologic picture shows fibrosis and some hemorrhages in the tissue which may possibly suffice for a diagnosis of Kaposi's sarcoma. If the condition develops into an unmistakable hemorrhagic sarcoma, the presenter has made a shrewd diagnosis.

DR. HERMANN FEIT: I think that the presenter should be congratulated on making this diagnosis. It is interesting to see only part of the picture of Kaposi's sarcoma, i. e., macular lesions. I agree with the diagnosis. It is the first case in which I have seen only that one type of lesion.

DR. DAVID BLOOM: The patient had on the right elbow a few papular lesions, most of which have been removed for biopsy. On the distal part of the dorsa of the feet, involving the toes, one can feel slight induration of the skin, and it seems to me that the lesions are slightly verrucous in appearance. I have also been impressed with the early stage of the condition in this patient, which was my main reason for presenting him at this meeting.

MYCOSIS FUNGOIDES. Presented by DR. JOHN H. HARRIS.

J. J., a woman, aged 40, says that she has had her present eruption for about one year. When first seen, the condition was about as it is now on the right side. The left side had been treated with roentgen radiation, ¼ unit of unfiltered rays being given each week for four weeks, and the eruption had practically disappeared. No roentgen therapy has been applied to the right side. The report on a biopsy which was made two weeks ago has not been received, because the slides were misplaced. The report will be presented at the next meeting.

DISCUSSION

DR. E. WILLIAM ABRAMOWITZ: A man, presented before the section last year, who was originally treated for mycosis fungoides by George Henry Fox more than thirty-five years ago and is still alive, only in the past few months has shown the granulomatous lesions that signify the third and final stage of the disease. Any number of biopsies have been made, and each time the histologic report has been mycosis fungoides. He is at present in the Mount Sinai Hospital.

DR. HOWARD FOX: I should call attention to a diagnostic point that is not always recognized. In the stage of infiltration there is a variation in the amount of thickening in different patches and often in different parts of the same patch. That was well shown in one of these circinate plaques, one part of which was not raised above the skin, while another part was more distinctly infiltrated and raised. I agree with what Dr. Rosen says regarding the absence of objective signs of itching in mycosis fungoides. Scratch marks are rarely seen in such cases.

DR. SAMUEL PECK: When this patient came to the hospital, I tried to take as many biopsy specimens as possible to see if I could find a piece of tissue showing the typical structure of mycosis fungoides. Clinically, the lesions looked almost like those of the premycotic stage in some instances. The lesions always showed the histologic picture of mycosis fungoides.

DR. WALTER J. HIGHMAN: I had something poignantly brought to notice in a patient with mycosis fungoides observed for five or six years, who died a year ago. In the terminal phase of the condition, during the last months of life, the end was heralded by a curious exanthem resembling circinate toxic erythema, suggesting toxemia. What remained of these lesions seemed to be the starting point of new mycotic lesions, which ultimately became voluminous. Autopsy showed that the viscera too were riddled with tumors.

DERMATITIS HERPETIFORMIS. Presented by DR. CHARLES WOLF for DR. I. M. LASHINSKY.

W. G. M., a man, aged 20, born in Russia, came to the hospital because of an itching eruption on his trunk and extremities. He stated that he had had recurrent eruptions since the age of 5 years. He had had measles, chickenpox, scarlet fever, typhus and diphtheria. Tonsillectomy had been performed.

He presented a papular eruption over the elbows and the backs of the knees and on the trunk, with scattered lesions on the face. When he first came to the clinic, the lesions were markedly pruriginous and had a tendency to grouping. He was given saturated solution of potassium iodide, 3 drops three times a day, for three days. This caused an intense flaring up of the lesions, which showed a more marked tendency to grouping, and the itching became more intense. However, the application of a 33 per cent potassium iodide ointment to the skin in the form of a patch test produced no reaction.

The lesions are now more vesicular and grouped than at any other time since the patient has been under observation. There is no pigmentation.

The urine was normal. The blood count showed 6,900 white cells, 5,600,000 red blood cells, 52 per cent polymorphonuclears, 41 per cent lymphocytes, 5 per cent eosinophils and 2 per cent mononuclears.

DISCUSSION

DR. ADOLPH ROSTENBERG: I think that the diagnosis of Duhring's disease fits this case well. There are manifold kinds of lesions. While there are no bullae or vesicles at present, they were present in previous attacks. The grouping of the lesions, the itching and the long duration are also characteristic of this disease.

DR. MARION SULZBERGER: The presenter stated that the ingestion of iodine caused an exacerbation of the eruption and that the use of iodine in a patch test

did not. Where was the patch test made? One sometimes has to apply iodine to the healed, previously affected areas to get a positive response.

DR. WALTER J. HIGHMAN: I observed a boy, aged 12, who clinically had dermatitis herpetiformis. I used local applications of a potassium iodide cream. There was no reaction on the unaffected skin, but where the ointment was applied to lesions they disappeared. This accident started the patient on the road to recovery.

DR. MARION SULZBERGER: That is how hypersensitivity to iodine was discovered. It is well known that iodine can be of benefit, and can in some instances heal some or all of the lesions of dermatitis herpetiformis. It was, I believe, through the therapeutic use of iodine that the hypersensitivity to iodine was discovered.

DR. F. M. LASHINSKY: When potassium iodide, 5 drops three times a day, for three days, was given, a flare-up of the lesions occurred, whereas the local application of a salve containing 33 per cent of potassium iodide did not produce any reaction. This is the second case of suspected dermatitis herpetiformis observed within the last three weeks in which iodides applied locally gave no reaction, whereas the drug given by mouth produced a reaction.

Another interesting observation is the action of histamine in this case; when 0.5 mg. of histamine was injected hypodermically, the patient responded with severe itching for two hours.

A CASE FOR DIAGNOSIS (ERYTHROPLASIA?). Presented by DR. DAVID BLOOM.

S. F., a man, aged 53, an American, has had a lesion on the penis for five months. On examination, it consisted of a fairly round, well circumscribed, smooth, red, velvety-looking, nickel-sized, slightly indurated and slightly raised patch on the posterior aspect of the inner portion of the prepuce, three-fourths inch (0.18 cm.) from the sulcus. The borders were slightly raised and showed indentations especially on the left side. The lesion has not produced any subjective symptoms. It started with a pinhead-sized spot which gradually assumed the present size. There is no inguinal adenopathy. The patient is married and has four living and healthy children. The past history is unimportant, and the patient says that he has never had a syphilitic infection. The Wassermann test and dark-field examinations gave negative results.

Biopsy showed the histologic picture described in erythroplasia.

DISCUSSION

DR. ISIDORE ROSEN: I strongly suspect that this lesion is epitheliomatous. A persistent isolated lesion having the clinical features of this one, i. e., sharp outline, moist surface, slightly rolled edge and resistance to all forms of therapy, is, in my opinion, suggestive of epithelioma.

DR. SIGMUND POLLITZER: The sections shown do not reveal anything characteristic of epithelioma. There is epithelial proliferation, but it is an orderly proliferation. The lesion may later become an epithelioma, if it is a precancerous lesion.

DR. T. J. RIORDAN: I could not make a diagnosis on the basis of histologic examination of the sections, but could rule out epithelioma. Three points lead one to think that the patient has syphilis: the increased vascular supply, the thickened and obliterated blood vessels and the increase of connective tissue. There is a necrotic area surrounded by fibroblasts and holding in its meshes three or four foci of infiltration consisting of closely packed lymphocytes and several larger cells which I cannot identify.

DR. MARION SULZBERGER: I think that Dr. Rosen's idea warrants further consideration. In my opinion, this is a condition which was first described by Darier and Fournier under the name of "épithéliome papillaire nu." Several years later, Queyrat described the same disease under the name of "érythroplasie."

Darier accepted that name. The localization on the penis is typical of this disease. There is one thing which is atypical, namely, that the lesion is not on the glans. In the majority of the cases it has been on the glans itself. The histologic appearance is almost characteristic. In a case which I presented before the section several months ago, in which I did not at first diagnose the condition correctly, but called it precancerosis until Dr. Goldenberg called my attention to the correct name, the histologic picture was practically identical with that in this case, though there was perhaps a slightly less marked change in the cutis. I showed the section to three European dermatologists, and all three made a diagnosis of erythroplasia. Some of these cases have been reported to metastasize even before the original lesion has taken on infiltrative growth. The histologic change, which is characteristic of erythroplasia, is somewhat different from that which one usually meets in other forms of precancerosis. All of Queyrat's original cases were associated with syphilis. Originally it was thought that syphilis was the etiologic factor. Darier says that syphilis does not occur regularly in these cases. In the case which I previously presented before this section there was no evidence of syphilis.

DR. DAVID BLOOM: When my associates and I first saw the patient we thought of epithelioma and erythroplasia. As the biopsy specimen did not show any epitheliomatous changes, we were inclined to believe that the condition was erythroplasia.

In regard to Dr. Sulzberger's statements, I wish to state that Darier says that there are cases presenting dyskeratotic changes, such as those in Bowen's precancerous dermatosis. As to the location, there are mentioned, besides the glans penis, the prepuce, the buccal mucosa, the tongue, the lips and the cheeks.

ROENTGEN DERMATITIS TREATED WITH A SALT-FREE DIET AND A VITAMIN A-RICH REGIMEN. Presented by DR. HERMANN FEIT.

This woman, aged 45, born in the United States, was treated for eczema fifteen years ago by means of roentgen therapy. When I first saw her there were areas on both palms which were extremely dry and presented telangiectasias and several keratoses. Before treatment was begun the hands were very stiff and hard to open or close. Two weeks after the beginning of a regimen of haliver oil and mild ultraviolet treatment, the texture of the hands improved 75 per cent. One keratosis was removed by electrodesiccation.

MONILIA INFECTION OF THE MOUTH. Presented by DR. EUGENE F. TRAUB.

R. K. B., a boy, aged 11 years, born in the United States, has been suffering from an infection of the mouth for eight years. He was first seen in the Stuyvesant Square Dispensary on March 3, 1933. At that time he presented lesions in both commissures of the mouth, on the lateral sides of the tongue, on the middorsum of the tongue, on the roof of the mouth and on the lateral buccal mucosa along the central margin. The Wassermann reaction was negative. Cultures taken from the angles of the mouth, the tongue, the roof of the mouth and the buccal mucosa showed Monilia albicans.

NODULI CUTANEI. Presented by DR. HENRY SILVER.

E. M., a woman, aged 48, has seven healthy children. Eight years ago she had pneumonia and was operated on for empyema. About a year ago she began to complain of weakness in the legs. This was found to be due to a varicose complex, for which she was treated with injections. About three years ago she noticed on her chest and legs small reddish "lumps." She does not know whether these have ever disappeared spontaneously, but lately she discovered new lesions on the legs.

When first seen she presented two types of lesions: (1) lesions on the left breast with a reddish border and a white, depressed, atrophic center; (2) isolated,

reddish to skin-colored, raised lesions, varying from the size of a pea to that of a bean, dispersed over the upper and lower extremities. These lesions were firm and were numerous on the inner aspects of the thighs. Because of the clinical resemblance to sarcoids, two lesions were removed for histologic examination.

The lesion from the breast showed scar tissue. The one from the thigh revealed a slight amount of hyperkeratosis. The center of the section showed acanthosis with prolongation and branching of epidermal processes. The cutis showed marked inflammatory changes consisting of round cell infiltration. The vessels and lymph spaces were dilated. The walls of some of the vessels showed swelling.

LICHEN PLANUS, SHOWING XANTHOMA-LIKE COLORATION (DIABETES MELLITUS). Presented by DR. I. M. LASHINSKY.

R. S., a white woman, aged 50, born in Russia, was referred to me from the Medical Clinic of the Mount Sinai Hospital on Feb. 28, 1933, because of an eruption on the body. She stated that for the last eight months she had had cutaneous lesions on the thighs and on the lower part of the back, in the axillae and under the breasts. These lesions were pruriginous, especially at night.

The present attack, according to the patient, is the third. She had a similar attack about eleven years ago, and it took ten months for the lesions to undergo involution. About seven years ago a similar eruption appeared in the same location, which lasted for about eight months.

The patient has been known to have diabetes for the last eighteen years, and of late she has been suffering from hypertension.

When the present eruption began the lesions appeared first on the bend of the right elbow, then under the breasts, in the axillae and on the medial sides of the thighs, and finally in the midlumbosacral region.

On Feb. 28, 1933, the patient presented flat, somewhat shiny papules, varying in size from that of a pinhead to that of a large pea; most of the lesions were either polygonal or almost circular. The lesions on the thighs and in the axillae were definitely violaceous, while those in the lumbosacral region were lemon yellow, suggesting xanthoma. None of the lesions was scaly.

Biopsy on specimens taken from the lower part of the back and the thighs was reported by Dr. Peck to show "typical lichen planus."

LOUIS CHARGIN, M.D., *Secretary*

Regular Meeting, April 4, 1933

A. BENSON CANNON, M.D., *Chairman*

PITYRIASIS RUBRA PILARIS. Presented by DR. LOUIS CHARGIN.

A Filipino girl, aged 4, had a generalized eruption which began in an acute form on the face and scalp fourteen months ago. It then rapidly became generalized, including the palms and soles. The disease resembled at first seborrheic eczema or generalized dermatitis. Within the last few months the picture has become characteristic. The face, scalp and body show coarse scaling and erythema. The palms and soles show marked hyperkeratosis. On the dorsal surfaces of the fingers and toes are grouped, reddish, follicular papules, with a fine scale. Similar follicular papular groups are to be seen on the knees, the back of the neck and the legs. There has been no improvement within the last few weeks. The child feels well. The Wassermann test was negative. The histologic observations were characteristic of the disease.

DISCUSSION

DR. ISIDORE ROSEN: When this patient was first admitted to the hospital it was difficult to make a diagnosis because of the poor hygiene. The entire body was covered with a generalized erythematosquamous eruption complicated by a pyogenic infection. After a few days in the hospital the secondary infection cleared up with bathing and the local use of antiseptics, and the underlying disease was found to be pityriasis rubra pilaris. An interesting feature in this case is the decided improvement in the eruption following a febrile condition of unknown origin in which the temperature ranged between 103 and 105 F. and which lasted about a month.

DR. E. WILLIAM ABRAMOWITZ: I had under observation a boy 5 or 6 years old, who was presented several years ago from the Vanderbilt Clinic. His condition started first with an attack of fever and an eruption that was diagnosed as probably that of scarlet fever. I saw him after the fever had subsided. The lesions on the scalp and body closely resembled seborrheic dermatitis. After several weeks the characteristic nutmeg-grater appearance of pityriasis rubra pilaris (Devergie) was noted, with involvement of the backs of the first phalanges of the fingers. He was admitted to the hospital, where he was thoroughly examined, but nothing definite was found. As I remember, the eruption did not disappear until a year later. Nothing but soothing ointments were used, and no glandular therapy was prescribed. I have not seen or heard of the boy since.

DR. SAMUEL PECK: Thyroid therapy was instituted in this case but it had to be discontinued because of the fever which had developed. Extensive investigations were made to discover a focus of infection which would account for the fever, but without avail.

DR. CHARLES LERNER: The skin is a part of the temperature-regulating mechanism of the body. With the involvement of this much cutaneous surface, particularly in a child, it can easily be seen how the regulation of the body temperature would be thrown out of balance.

DR. SIGMUND POLLITZER: Patients with this condition seldom recover. Their skin is dry and scaly, and itching occurs. There is a tremendous amount of trauma. I recall one patient with pityriasis rubra pilaris who first came to me as a boy. He died at the age of 45 of streptococcic septicemia. In the last years of life occasional attacks of hyperpyrexia with delirium developed. He died during one of these attacks. I believe that this systemic infection explains the attacks of fever that occur in conditions of this kind. This leads, of course, to a suggestion as to the methods of treatment. The most important factor in treatment is to keep the skin protected and greased. In regard to various endocrine substances, I think that they should be tried, especially in so young a patient as this. The disease certainly resembles an endocrine disturbance. It is through cracks and tears in the skin that the patient gets infections later. I wish to remind you of the early cases of lichen ruber acuminatus reported by Hebra. He reported that all of his cases terminated fatally. Though there is some question as to the correctness of this statement, it is fair to assume that most of the patients died of streptococcic infections.

DR. MARION B. SULZBERGER: In a group of cases reviewed and reported by J. Jadassohn, tuberculosis was demonstrated as a factor. I think, as Dr. Pollitzer has pointed out, that other cases occur, with septicemia due to streptococci. The entire appearance of the disease leads one to believe that it may frequently be due to bacillemia or to circulating toxic substances. The follicular localization and lichen spinulosus look very much like the condition which one sees in other bacillemias, such as lichen trichophyticus and lichen scrofulosus. It is known today that there may be frequent showers of pathogenic micro-organisms into the blood without septic or other signs or symptoms. This may explain the alteration of asymptomatic with febrile stages in this disease.

DR. LOUIS CHARGIN: Tuberculosis was ruled out on the basis of physical as well as roentgen examination. With respect to this disease and lichen rubra acuminatus, there seems to be a tendency in recent years to consider them as two different diseases.

PARAPSORIASIS (?); PSORIASIS (?). Presented by DR. GEORGE M. LEWIS.

A youth, aged 18, was admitted to the clinic of the New York Post-Graduate Medical School and Hospital, complaining of mild erythema and scaling of the trunk of moderate degree. The scaling was of a dry variety on the scalp; it extended to the neck and the face. On the backs of the hands and on the palms were brown erythematous papules, some of which were covered with scales. Around the ankles and on the inner aspect of the legs were similar lesions, together with an erythema which was possibly caused by external irritation. There was mottling on the head of the penis. Biopsy (performed by Dr. Fraser) showed a histologic picture suggestive of psoriasis. Generalized ultraviolet therapy effected considerable improvement. The Wassermann and Kline diagnostic and exclusion tests were negative.

DISCUSSION

DR. HERMAN FEIT: I consider the case to be one of parapsoriasis.

DR. E. WILLIAM ABRAMOWITZ: I think that the clinical features favor a diagnosis of psoriasis. The lesions on the face and scalp resemble psoriasis, and I suggest that another biopsy be made. The presence of palmar lesions and the fact that the eruption disappeared during the summer are evidence against a diagnosis of parapsoriasis.

DR. JOSEPH L. MORSE: I favor a diagnosis of psoriasis.

DR. J. FRANK FRASER: The histologic picture favors a diagnosis of psoriasis.

TUBERCULOSIS VERRUCOSA CUTIS (?); PSORIASIS (?). Presented by DR. FRANK VERO.

A white man, aged 31, born in the United States, was first seen in July, 1932. He said that about thirteen years before, while working as a mechanic, he noticed a few hard wartlike lesions on the knuckles of the third and fourth fingers of the left hand. There was occasional itching. The lesions slowly spread, and, although he had various local medications, such as salves, pastes and roentgen therapy, there was no improvement in the condition. His general health has been good.

On the dorsal and partly on the lateral surfaces of the involved fingers there were a few small, red-brown, round, oval and more extensive confluent patches, which were greatly thickened. The surface of the lesions was rough and was covered with adherent scales and yellowish-gray, horny, irregular verrucosities, as well as a number of interspersed miliary ulcers. The borders showed a narrow erythematous areola, with occasional pustules the size of a pinhead. At the base of the fingers numerous solitary and confluent firm papular lesions were seen. The forefinger was edematous; the nails were not involved. The patient would not consent to a biopsy.

Treatment consisted of applications of pyrogallol ointment in increased concentrations. The condition has improved somewhat, showing involution of the patches and central healing.

DISCUSSION

DR. MARION B. SULZBERGER: I think that the diagnosis of tuberculosis verrucosa cutis could not be made on the present clinical appearance. I suggest that quantitative tuberculin tests be made and that the patient be intradermally tested with the Moro test on the lesion and on normal skin, to bring out a possible contrast reaction.

PITYRIASIS ROSEA-LIKE FORM OF LICHEN PLANUS (?). Presented by DR. MAX SCHEER.

A woman, aged 30, born in Hungary, was treated for tertiary syphilis in the clinic for diseases of the skin of the New York Post-Graduate Medical School and Hospital, from April 17, 1928, to Aug. 20, 1929. For the past three and one-half years she has received no treatment. Several days ago she came to the clinic complaining of a generalized rash of three weeks' duration. This had started on the chest and had gradually spread over all the body except the scalp, face and legs. There were two types of lesions. Some were flat, polygonal, shiny papules varying in size between that of a pinhead and that of a pea, and were located mostly on the chest and the sides of the neck, with a few scattered lesions on other parts of the body. The other type, which were located mostly on the back, abdomen and extremities, were oval, slightly elevated, dry, light brown lesions, varying in size between that of a dime and that of a quarter and covered with furfuraceous scales. The axis of some of the lesions lay in the lines of cleavage of the skin. Itching was intense. The Wassermann reaction was positive. Biopsy was performed on April 1, 1933, but the results have not yet been reported.

DISCUSSION

DR. JOSEPH L. MORSE: This patient said that she had a patch on the upper part of the chest about three days before the generalized eruption appeared. That may have been the herald patch. I am inclined toward the diagnosis of pityriasis rosea rather than lichen planus.

DR. ISIDORE ROSEN: I think that the generalized distribution, the erythemato-squamous character and the color of the lesions are in favor of pityriasis rosea.

DR. SAMUEL FELDMAN: There were several lesions on the buccal mucosa which were not unlike those seen in lichen planus. I have seen several cases of lichen planus which resembled pityriasis rosea. One patient, in particular, was under treatment for three or four weeks before the eruption took on the characteristics of lichen planus.

A CASE FOR DIAGNOSIS (PITYRIASIS ROSEA? TOXIC ERYTHEMA? POIKILODERMA ATROPHICANS?). Presented by DR. MAX SCHEER.

A man, aged 32, born in Russia, has an eruption which began three months ago in the right groin and has since gradually spread over the trunk, including the neck. Groups of lesions have gradually fused and have formed red patches and plaques of various shapes and sizes. Some of the lesions show scaling suggestive of pityriasis rosea. There seem to be small spots of atrophy in some of the lesions. The patient is from the clinic for diseases of the skin of the New York Post-Graduate Medical School and Hospital.

On histologic examination, the epidermis appeared somewhat flattened, with loss of the epidermal prolongations into the cutis and flattening of the papillary bodies. There was marked edema, mostly intracellular, of the basal cells scattered throughout the section. The papillary bodies showed marked edema and scattered infiltration composed mainly of mononuclear cells. There was a moderate amount of perivascular infiltration. The elastica showed fragmentation and disappearance of many of the elastic fibers. This was an active inflammatory process, and therefore the condition could not be classed as macular atrophy, which is an end-stage. It is conceivable that the condition may be a beginning macular atrophy, but certainly the only diagnosis possible now is dermatitis. A factor in favor of a possible future atrophic lesion is the fragmentation of the elastica. The histologic study was made by Dr. Satenstein.

DISCUSSION

DR. SAMUEL PECK: The histologic study shows that we are dealing with an active process; therefore, the diagnosis of macular atrophy cannot be made. It

can be said only that the process is one which may end in macular atrophy, as the only indication at present for this is fragmentation of the elastic fibers in the upper layers of the cutis.

DR. HERMANN FEIT: If there is any definite atrophy histologically, I think that this case belongs in the class of idiopathic atrophy.

DR. SIGMUND POLLITZER: Poikiloderma is primarily a disease of the capillaries. I should like to ask the presenter whether there is any evidence of proliferation of the capillaries, which certainly is not apparent clinically.

POIKILODERMA ATROPHICANS VASCULARIS. Presented by DR. LUDWIG OULMANN.

This patient was previously presented before the Manhattan Dermatological Society (ARCH. DERMAT. & SYPH. **23**:363 [Feb.] 1931). Since presentation the disease has become worse, sweating has ceased, and the eruption looks less like radiodermatitis.

DISCUSSION

DR. HERMANN FEIT: This patient has alopecia of the scalp and beard, which, according to his statement, has been present as long as the changes in the skin. Clinically, it is indistinguishable from alopecia areata. The modern conception of Jacobi's disease is that it is caused by an endocrine disturbance. A few meetings ago we saw a similar case presented for Dr. Throne, in which the underlying cause was retention of gold salt. The same clinical picture can be caused by different agents—endocrine disturbance and retention of a metal or an interaction between both, as we tried to show for alopecia areata. Different agents may also cause the same clinical picture. There are not as many different diseases of the skin as cutaneous reactions.

DR. LAIRD S. VAN DYCK: The case mentioned by Dr. Feit was in a patient who was presented before this Section three months ago, with lesions resembling poikiloderma. The lesions had appeared subsequently to an exfoliative dermatitis due to injections of gold. At the present time the patient's skin is almost clear. The only therapy employed was intravenous injections of sodium thiosulphate and calcium chloride.

DR. LUDWIG OULMANN: When this patient was presented before the Manhattan Dermatological Society none of the members doubted the diagnosis. Since then the condition has progressed and the picture has changed. There is no longer so much resemblance to radiodermatitis, but the similarity continues in the regions around the hips. The eruption on the scalp has spread, and the entire top of the head is infiltrated, with vascularization and loss of hair. The alopecia areata on the left side has neither increased nor filled in. Poikiloderma associated with endocrine changes is well known, and Taussig, in an article, mentioned this combination (ARCH. DERMAT. & SYPH. **25**:882 [May] 1932).

MORPHEA. Presented by DR. JOHN H. HARRIS.

A man, aged 36, had generalized white, macular, atrophic areas on the trunk and extremities. These areas varied in size from ⅛ to ¾ inch (from 0.3 to 1.9 cm.) in diameter. There were no subjective symptoms. They had been present as long as the patient could remember, and they had not increased in size or number. No other member of the family had a similar condition. There was a brown pigmentation in both groins, on the inner aspect of the thighs and in the flanks, which was not entirely due to contrast between the white macular areas and the normal skin. Microscopic examination showed morphea.

DISCUSSION

DR. SIGMUND POLLITZER: This type of disease was described by Czillag in Jacobi's "Atlas der Hautkrankheiten" in 1904, under the title "Dermatitis Lichenoides Atrophicans." I had a case like this which corresponded with Czillag's description and which proved on histologic examination to be morphea

in very minute spots, and punctate scleroderma in patches. I agree with the diagnosis, but I should qualify it and not call it simply morphea.

DR. SAMUEL PECK: About five years ago I described a case in the *Dermatologische Zeitschrift* which resembled this case in some respects, with the exception that there was an accompanying macular atrophy of the affected parts. The fact that the subcutaneous veins are so plainly visible indicates a disappearance of the subcutaneous fat. I believe that we are dealing here with depigmentation and hyperpigmentation, rather than with morphea or real atrophies.

DR. J. FRANK FRASER: The picture under the microscope is typical of morphea.

LUPUS ERYTHEMATOSUS (?); DERMATITIS MEDICAMENTOSA (GOLD) (?). Presented by DR. GEORGE M. LEWIS.

A man, aged 52, has received treatment for lupus erythematosus for the past five years. Gold salts were not used. On Nov. 2, 1932, he was given injections of gold sodium thiosulphate at the New York Hospital, beginning with 25 mg. After the first injection the lesions were somewhat painful and the erythema was increased, but these reactions did not recur after the subsequent weekly injections. On Jan. 2, 1933, the ear, nose and throat department advised tonsillectomy for infected tonsils, but this was not performed. Early in February a generalized erythematous macular eruption appeared, but therapy with a gold compound was continued for another four injections, by which time the patient had received eighteen injections totaling 850 mg. of gold sodium thiosulphate. Treatment with sodium thiosulphate was then instituted, and five doses were given, with improvement. A patch test in which 10 per cent and 30 per cent gold sodium thiosulphate was used was made on March 20, with negative results. Biopsy was performed on March 19, and the report (made by Dr. Fraser) was "suggestive of lupus erythematosus." A cutaneous lesion was examined chemically for gold, with negative results.

DISCUSSION

DR. JOSEPH L. MORSE: I do not know how extensive this patient's original eruption was, but tonight I can see only a discoid patch of lupus erythematosus near the right ear. The secondary eruption is probably dermatitis medicamentosa due to gold, but in places it looks like disseminated lupus erythematosus. It is my opinion, and I do not say this in criticism of the presenter, that small discoid patches of lupus erythematosus should not be treated with gold compounds, except as a last resort. Even with small doses, there is always danger of dissemination.

DR. E. WILLIAM ABRAMOWITZ: I think that the statement of Dr. Morse, that one should not use therapy with gold compounds in the single fixed type of lesions such as this patient has, needs correction. In patients with a fixed type of lesions of lupus erythematosus, whether such lesions are single or multiple, there is always danger that dissemination of the eruption will take place. Before the advent of therapy with gold compounds, irrespective of the method of treatment, blame was attached to the treatment if dissemination occurred. Of course, it was always difficult to decide whether or not this was so, but it is known that dissemination is apt to occur without any treatment. The important things to be avoided in cases of this type are strong exposure to sunlight and irradiation therapy. In this country it is considered the best policy to use very small doses of gold sodium thiosulphate, varying from 10 to 25 mg. Other preparations of gold should also be used in small doses. The intervals at which these preparations should be given are from four to five days, and if one watches the patient carefully, any reactions that may occur may be avoided later. Of course, patients vary in their reactions, but if the gold preparation is reliable, severe toxic symptoms may be easily avoided. When gold was first introduced for the treatment of pulmonary tuberculosis and other types of systemic tuberculosis, enormous doses were used, sometimes as high as 1,000 mg. or more, and many patients were able to tolerate these doses. The French use, on the average, from 50 to 300 mg. or more in a dose, and, while reactions are more apt to occur with this method, it is

not entirely the dosage that is responsible. According to the French, other factors, such as susceptibility and bitropism, are responsible. In this case, I am inclined to believe that the eruption on the body may be a dissemination of the lupus erythematosus, and in such cases therapy with gold compounds is usually contraindicated. The same applies, of course, if the lesions are a toxic eruption due to gold. So, in either case, no further injections of gold compounds should be given, and an expectant plan of treatment should be instituted.

DR. SAMUEL PECK: I have seen a number of cases of generalized lupus erythematosus at the Mount Sinai Hospital, the majority of which terminated fatally. The patient with an eruption of lupus erythematosus of this extent is usually quite ill. Very early in the disease atrophy may be expected, although this is not always the case. From the extent of the eruption and the rather benign course, it seems to me that the condition is a toxic eruption due to gold. Only in the eczematoid eruptions caused by drugs may a patch test be expected to give positive results, and even then there may be a period during the height of the eruption and shortly afterward when the patient is, for the time being, desensitized, and all patch tests at this time will give negative results. Even though gold is found in the skin, it is no proof of the etiology of the eruption in question. However, positive results of a patch test and the presence of gold in the skin suggest the etiology of an eruption. In the last analysis, toleration of the drugs is the final proof.

DR. MARION B. SULZBERGER: I wish to emphasize what Dr. Peck has said in regard to the demonstration of causative factors in tissue. I do not think that the demonstration of a substance in the tissue is at all necessary to prove that this substance has caused an eruption. The most sensitive analytic procedure available to demonstrate the presence of any substance is the immunologic experiment in the hypersensitive man or animal, that is, testing for its presence in a sensitized living organism. This test is much more sensitive than any chemical measure. It therefore follows that a negative chemical test for a substance does not rule out the latter as the etiologic agent in a case of immunologic hypersensitivity, such as is found in cases of dermatitis due to drugs.

Apropos of this discussion in the perusal of Osborne's work on arsphenamine dermatitis, most readers arrive at the conclusion that the histologic demonstration of arsenic in the skin proves that an eruption is due to arsenic and that in no other dermatitis would so much arsenic be found in the section. I had a conversation with Dr. Osborne, and he agreed with me that any person who had received arsenic and who had a subsequent dermatitis from some other cause could have arsenic in the tissues. In other words, the negative chemical findings of a substance in the tissues does not exclude this substance as the possible cause of a hypersensitive cutaneous reaction. A drug may cause a reaction, though it is present in such small quantities that it is not chemically demonstrable. And, vice versa, the demonstration of the presence of a substance in the tissues does not prove that this substance has actually caused a dermatitis. It may be present and even demonstrable in increased quantities in the affected areas, owing simply to the inflammation (hyperemia and other conditions) of a dermatitis from another cause.

The chemical demonstration of the presence of a substance is useful only as a proof that there has been prior contact with that substance; for instance, in a case which appears to be an eruption caused by phenolphthalein (or some other drug) but in which ingestion of phenolphthalein (or the other drug) is denied and cannot be clinically proved, the chemical demonstration of the drug in tissues or fluids of the body proves the previous contact and thus helps to determine the diagnosis.

DR. PAUL GROSS: The case was presented as one of dermatitis medicamentosa and not as dermatitis exfoliativa. I believe that this distinction should be maintained for gold compounds as well as for arsphenamine, because the mechanism differs considerably in these two conditions. If some of the lesions suggest lupus erythematosus this would not be evidence against the original diagnosis. Judging

from experience with ultraviolet rays and other agents, any irritation of the skin may take the form of the characteristic eruption in a patient with lupus erythematosus.

LICHEN PLANUS AND PSORIASIS. Presented by DR. SAMUEL FELDMAN.

A man, aged 34, has had psoriasis of the trunk, scalp and nails for fifteen years and lichen planus of the forearms and the glans penis for three weeks. The diagnoses were confirmed by microscopic examination. This is the second patient with such a combination of diseases that I have seen recently.

DISCUSSION

DR. MARION B. SULZBERGER: I am under the impression that lichen planus and psoriasis are combined in the same patient in approximately the number of cases in which one would expect to find a chance combination of two unrelated diseases. In the absence of an accurate statistical study, no conclusions can be drawn as to a possible relationship between the two diseases.

DR. ADOLPH ROSTENBERG: I have observed a similar combination in a patient who had been given arsenic for psoriasis. Lichen planus developed subsequently, and I thought at the time that it was of arsenical origin.

DR. SAMUEL FELDMAN: This patient has received no internal medication.

PSORIASIS (?); DERMATOPHYTOSIS (?); ACRODERMATITIS CONTINUA SUPPURATIVA (HALLOPEAU) (?). Presented by DR. PAUL GROSS.

A girl, aged 17, stated that seven years ago she burned her thumb. The condition for which she is presented began on the tip of the finger five years later. The patient thought that the condition was related to a nail polish that she had been using. She discontinued the use of the polish on this nail, but continued to use it for the other nails. The condition has disappeared and returned four times. The nail, however, has never cleared, in spite of the fact that it has been removed several times.

The nail of the right thumb is exceedingly thick; it is raised from its bed and is also curved distally. The lateral edges are growing under the nail. The skin at the tip is involved mostly on the flexor surface. The eruption extends to about 0.5 cm. on the extensor surface and 3.5 cm. on the flexor surface and has a sharp and arciform outline on the proximal margin. There is a highly red, scaling surface, with many confluent pustules the size of a pinhead or larger. One rather wide fissure is present. There is no definite scaling between the toes.

Examination of the nails and the skin of the fingers and toes for tinea gave negative findings. Bacteriologic examination also gave negative results.

DISCUSSION

DR. PAUL GROSS: To establish the diagnosis of cutaneous infection caused by monilia, it is necessary, judging from Dr. Hopkins' work, to find pathogenic strains of monilia. The diagnoses mentioned were all taken into consideration, but in view of the negative findings for fungus, acrodermatitis (Hallopeau) was decided on.

ONYCHOMYCOSIS. Presented by DR. GEORGE M. LEWIS.

This patient was previously presented before the Section, in February, 1933.

DISCUSSION

DR. GEORGE M. LEWIS: My patient was presented two months ago and is here again to show the result of therapy. Cultures have grown, but it is uncertain whether the organism is a monilia or a cryptococcus. Similar clinical findings

were obtained in this patient and in Dr. Gross' patient, and it is not improbable that both cases are examples of the same disease.

DR. J. GARDNER HOPKINS: I was struck with the similarity of these two cases and was much interested in Dr. Lewis' report. Studies of this kind are needed to clear up the diagnosis. However, yeastlike fungi are frequently present on normal skin. I do not think that the finding of yeast cells in the tissue is significant, unless it can be shown that they belong to a pathogenic species. The lesion itself does not present the clinical picture of yeast infection. There is no thickening of the paronychium, which is almost constantly seen in infections caused by monilia.

SYRINGOMA. Presented by DR. LOUIS CHARGIN.

A colored woman, aged 23, single, a housekeeper, had an eruption which appeared two years ago on the arms and which later spread to the chest and then to the abdomen. The eruption consisted of somewhat conical, more or less solid lesions, varying in size from that of a pinhead to that of a millet seed. The lesions were skin-colored for the most part, but some showed a yellowish tint. They were isolated and in groups of from six to ten, the grouped lesions being found especially on the abdomen and chest. The best developed lesions were also on the abdomen and chest, while those on the arms were least developed. The eruption was profuse on the abdomen, less so on the chest and least on the arms. There were a few scattered lesions on the neck and on the outer surface of the upper part of the thighs. On the lower eyelid there were a few isolated, small lesions which were apparently of the same nature as the lesions on the body. They did not feel tense and did not disappear or flatten on stretching of the skin. They were somewhat shiny when looked at askance. There were no subjective symptoms. In recent months there have been no new lesions, and no lesions have disappeared since the onset of the trouble. The patient is the only member of her family to be affected with the condition. A biopsy specimen showed the characteristic picture of syringoma. Roentgen examination of the chest showed active tuberculosis.

DISCUSSION

DR. MARION B. SULZBERGER: The clinical and perhaps even the histologic differentiation of some cases of this type is difficult. Of course, among the other conditions which come into the group are (1) sebaceous adenomas and (2) (only on account of the name) an entirely different disease, hydrocystoma. In the latter there is actually retention of the sweat in the ducts of the sweat glands. This condition is a true cyst in contradistinction to the former condition, in which there are nevi or epitheliomas and adenomas determined by heredity. The lesions in hydrocystoma alternately appear and become invisible either spontaneously or under therapeutic measures. The nevoid anomalies do not generally undergo spontaneous involution.

DR. SIGMUND POLLITZER: The first case of syringoma described was reported by Kaposi, who made a mistake in diagnosis on the basis of his histologic examinations and called the condition lymphangioma tuberosum multiplex. Török showed that the cases were syringocystadenoma in which the parallel rows of epithelial cells looked like ducts of sweat glands of which he thought they represented embryonal rests. Tricho-epithelioma is a different condition histologically, and multiple benign epithelioma still another.

DR. J. FRANK FRASER: I agree with Dr. Chargin's diagnosis. Dr. Pollitzer has given a clear description of the histopathology. There is an illustration in *La pratique dermatologique* which corresponds in every detail with the clinical picture presented here.

BENIGN CYSTIC EPITHELIOMA. Presented by DR. GEORGE M. LEWIS.

Nodules developed on the nose of a man, aged 35, eighteen years ago. These nodules have since slowly increased in number and in size, spreading to the

forehead, the sides of the nose, the cheeks and behind the ears. The nodules vary in size from that of pinhead to that of a pea and are skin-colored, tense, nonpedunculated and, in places, confluent. The report of the biopsy, made by Dr. Fraser, stated that the condition is benign cystic epithelioma.

FOX-FORDYCE DISEASE. Presented by DR. FRANK VERO.

A white woman, aged 36, complained of a persistent, severe itching in the axillae and on the lower part of the abdomen, of two months' duration. In 1930 she was treated for hydronephrosis and ureteral stricture. Her menstruation has always been normal. She has had five normal pregnancies. There are numerous, discrete, round, slightly raised, firm, papular and nodular lesions, the size of a pinhead and of a millet seed, in the axillae. Their color varies from flesh to light red. There are no scratch marks, and there are no lesions in the pubic region. Topical applications have afforded no relief.

HYDROA VACCINIFORME. Presented by DR. LAIRD S. VAN DYCK.

The patient was first seen on Feb. 27, 1933, at which time a history was given that small blisters had appeared over the bridge of the nose after exposure to sun and wind while the patient was at the beach during September, 1932. These blisters healed within a few days, leaving scars, and new crops have appeared from time to time. Examination showed tense, round vesicles and irregular bullae with crusting on the nose and cheeks. There were also atrophic reddish scars. The vesicles and bullae were of the vacciniform type. Examination of the urine for hematoporphyrin gave negative findings.

PERIPHLEBITIS NODULARIS NECROTICANS (?). Presented by DR. LEWIS BYRNE ROBINSON.

A woman, aged 33, had about seventy lesions on her legs and thighs three years ago, which had appeared intermittently. They appeared about every six weeks. The lesion was first a firm subcutaneous nodule. Some nodules would gradually be absorbed in the course of about three weeks; others became tender, and there was a spreading infiltration around them which was at times as wide as 3 inches (7.6 cm.) in diameter. The overlying tissue was red; then a rapid change, apparently liquefaction, occurred in the center of the lesion, and the overlying skin became purple and subsequently discharged a serosanguineous fluid. No etiologic factors could be determined on the basis of the patient's history. The Wassermann test was negative. Culture of the fluid was also negative.

SCLERODERMA. Presented by DR. ANDREW J. GILMOUR.

A girl, aged 9, weighed 13 pounds (5,896 Gm.) at birth. Between February and July, 1927, she had varicella, measles, scarlet fever and pneumonia. In October small white spots appeared on the left shoulder and the left knee. The spots on the arm gradually spread, became confluent and extended to the tips of the fingers. The spots on the knee did not spread. The involvement of the whole arm took place within two months. During the past five years the lesion has been getting tighter, so that for the past year there has been some limitation of extension of the left arm. Pain and tenderness have been absent, but there has been occasional itching. A complete physical and neurologic examination revealed only that the cutaneous lesion on the left arm followed the cutaneous distribution of the fourth, fifth and sixth cervical nerves. Pancreas extract, in doses of 1 cc., given intramuscularly, was administered weekly, beginning on Oct. 28, 1932; and sixteen injections in all have been given, with slight improvement.

LOUIS CHARGIN, M.D., *Secretary*

Regular Meeting, May 2, 1933

A. BENSON CANNON, M.D., *Chairman*

A CASE FOR DIAGNOSIS. Presented by DR. E. C. WEISE.

This patient was previously presented before the section on Dec. 6, 1932, with a condition diagnosed as lichen planus atrophicus. Since then the patient has received seven doses of roentgen therapy on the hands and five on the face, as well as numerous injections of mercuric salicylarsenate, without marked clinical improvement. The histologic diagnosis is lichen planus (?) of the forearm and lichen planus (?) of the hand. The patient is presented again for a discussion of the diagnosis.

DISCUSSION

DR. E. C. WEISE: This patient is an Indian, previously presented with a condition diagnosed as lichen planus atrophicus. At that time he gave a history of having had an eruption, beginning two years before examination, in the form of small papules which itched intensely and increased in extent for about one and a half years. The eruption then began to spread by coalescence, forming confluent patches with atrophy and depigmentation. Some of these patches formed bizarre shapes and occasionally showed a tendency toward hyperkeratotic plugging of the follicles, as well as a hyperpigmentation at the periphery of the lesions. When seen at the Vanderbilt Clinic in December, the patient presented these lesions, as just described, and, in addition, small, flat-topped, shiny papules on the backs of both hands, suggestive of linear distribution; others were confluent and formed large papular lesions.

One would gain the impression at first glance that this patient presents a case of widespread lupus erythematosus, but, on closer inspection and considering the small papular lesions, one is more inclined toward lichen planus. I have not seen the man since the night he was previously presented, but I was told that his condition had not improved. For this reason some of the physicians at the clinic believe there might still be a question of diagnosis, and are considering lupus erythematosus as a possibility. However, in the interval that I have not seen this patient, many of the papules on the cheeks and hands have disappeared.

DR. HOWARD FOX: This is one of the most puzzling cases presented. If one saw only the lesions on the vermilion border and those on the cheeks and near the ears, the diagnosis of lupus erythematosus would seem probable. Many of the other lesions scattered over the body simulate psoriasis, in which the scales have been removed. I saw nothing to suggest lichen planus. All of the lesions without doubt represent the same process, and I think that lupus erythematosus would be the most likely diagnosis.

DR. SIGMUND POLLITZER: I agree that this case is certainly of extraordinary interest. This man has, here and there, definite papules of lichen planus. I saw one at least on the back, and I also saw one or two circinate papular lesions like those seen in lichen planus. I should be inclined to say that this man has lichen planus, but I cannot fit that diagnosis in with the other lesions, especially with that group of broad, irregularly outlined patches on the back of the ear and neck below the mastoid area on one side. That group of lesions and many others do not resemble anything I have ever seen described as lichen planus. On the other hand, it does not look like lupus erythematosus; there is no scaling or follicular plugs, but simply atrophic patches which might well be the result of lichen planus, except for the great size of the patches. I should say that he has lichen planus, with extraordinary lesions that may or may not be lichen planus scattered over the body. The process may be the same everywhere, but it does not look so.

A Case for Diagnosis (Fibroma [?] with an Ecchymotic Ring). Presented by Dr. Fred Wise.

M. O., a woman, aged 50, married, was admitted to the clinic for diseases of the skin of the New York Post-Graduate Medical School and Hospital on May 2, 1933. She stated that she had had a little spot on the left thigh for ten years, but it was only a week previously that the lesion had become red and increased in size with the appearance of a blue ring around it. The lesion is roughly circular, ½ inch (1.27 cm.) in diameter, firm, slightly elevated and glistening. It is a pale brownish red, with exaggeration of the color at the periphery. Around this lesion is a pigmented halo of violaceous color, the average width of which is ⅛ inch (0.31 cm.). Between the lesion and the halo is a rim of healthy skin 1/16 inch (0.15 cm.) in width. There is no history of injury.

DISCUSSION

Dr. Fred Wise: This patient presents more of a medical curiosity than anything else. She appeared at the clinic for the first time today, and no studies have been made. She is presented chiefly on account of the target-like appearance of the lesion with an area of ecchymosis surrounding the fibroma. Whether that is part of the pathologic process or whether it is the result of trauma, I do not know. I have never seen a lesion of this kind surrounded by a ring of ecchymosis. The history of the patient indicates that the tumor has been present for ten years, and its color has changed within a week.

Dr. Oscar L. Levin: The lesion suggests the appearance of noduli cutanei as described by Lewandowski and Arning, and also a foreign body tumor, but differs from these conditions in that the surface is glossy, of more fleshy appearance, appearing vesicular, and showing a hemorrhagic areola. It is, however, my opinion that the condition is probably a fibrosarcoma. This condition is always difficult to cure and must be excised completely, as it shows a tendency to recurrence.

Dr. Louis Tulipan: On account of the color of the lesion and the history of long duration, I believe that this is a condition called fibroblastic sarcoma or fibroblastoma. These tumors are usually persistent and unless removed thoroughly will recur. The lesions are not malignant. In removing the tumor, I suggest that it be removed very widely and deeply.

Dr. Hermann Goldenberg: The point taken by Dr. Tulipan is a good one. He is probably referring to the disease called dermatofibrosarcoma protuberans, described by Darier and Hoffmann.

Dr. Hermann Feit: Fibrosarcoma of the skin, as described by Darier and Hoffmann, can be absolutely ruled out, as those tumors are multiple and protuberant as can readily be seen from the picture in Darier's "Précise de dermatologie."

Dr. Sigmund Pollitzer: I should like to say that the patient told me distinctly that this tumor, which has been present for ten years, originally had the color of the surrounding skin and only recently became bright red, as it is now, and in a week or so was surrounded by an ecchymotic ring.

Lichen Scrofulosum and Papulonecrotic Tuberculid. Presented by Dr. Oscar L. Levin and Dr. S. H. Silvers (by invitation).

H. L., a colored girl, aged 8, was admitted to the Sea View Hospital on Aug. 23, 1932, with a pulmonary condition. The patient's mother was tuberculous; otherwise the family history was irrelevant. On April 3, 1933, lesions of the skin were noticed on the back and chest. These lesions were generalized papular eruptions varying in size from that of a pinhead to that of a pea. The eruption on the trunk consisted of discrete and confluent papules, varying in size from that of a pinpoint to that of a pinhead, which formed patches the size of a pea or that of a dime. Some were red and had crusted centers and slight scales.

Examination of the lungs revealed fibrosis at both roots and a resolving process in the middle lobe of the right lung. The Mantoux test was positive, the urine was normal, and the Wassermann reaction was negative. The patient's ears, nose and throat were normal. The blood and differential counts were normal. The treatment consisted of increasing doses of ultraviolet irradiation and large doses of cod liver oil.

LICHEN SCROFULOSORUM. Presented by DR. OSCAR L. LEVIN and DR. S. H. SILVERS (by invitation).

R. W., a colored boy, aged 6, was admitted to the Sea View Hospital on May 31, 1933, with a condition diagnosed as encapsulated fluid of the base of the right lung, probably of tuberculous origin. There was no history of infection. Four months prior to presentation small patches of violaceous lesions developed on the trunk and neck. The lesions were papulofollicular and grouped, showed fine scales and were the size of a pinhead. There was no tendency to ulceration.

The test of the sputum was negative for bacilli, the Mantoux test was positive, and the Wassermann reaction was negative. The urine and blood count and the basal metabolic rate were normal.

Treatment consisted of large doses of cod liver oil and increasing doses of ultraviolet rays.

DISCUSSION

DR. HOWARD FOX: I do not know why lichen scrofulosorum appears to be rarer in this country than in Europe. It is unusual to see two cases of this disease presented. Although these cases show typical groups of flesh-colored papules on the trunk, I am surprised to see so much evidence of scratching. The cases I have seen were apparently not pruritic.

DR. SIGMUND POLLITZER: Does not this disease appear more frequently among the Negroes than among the white race? The majority of the cases shown here in the last thirty years have been in Negroes.

DR. HOWARD FOX: It is my impression that this type of lesion is more common in Negroes than in white people, corresponding to the greater incidence in the Negro of tuberculosis.

DR. EDWARD MALONEY: My impression agrees with that of Dr. Pollitzer. I believe that most cases of lichen scrofulosorum that I have seen have been in colored children.

DR. MAURICE J. COSTELLO (by invitation): I spent about four years in the Saranac Lake district. During more than one year of this time I was resident physician in a large sanatorium for young girls suffering from pulmonary tuberculosis. They ranged in age from 4 to 25 years. Even though they were observed closely for lesions of the skin, I never saw a case of tuberculosis of the skin or of lichen scrofulosorum. Tuberculosis of the skin is practically never seen in that locality, even though the patients have all stages of pulmonary tuberculosis. Tuberculosis of the skin is more frequent in the Negro probably because he is more susceptible and has less resistance to it once it is contracted, and naturally under these conditions the manifestations are more numerous and varied.

DR. OSCAR L. LEVIN: There are certain points to be emphasized in lichen scrofulosorum. It is not uncommon in tuberculous children, and may be observed as occurring with tuberculosis of the bones, lymph glands and joints. It is common among the children at Sea View Hospital, where there are about sixteen hundred patients with tuberculosis. The condition is commonly observed, and there are usually from twenty to thirty patients in the hospital who show lichen scrofulosorum. The condition responds rapidly to treatment with the ultraviolet rays. Recurrences are common. The lesions may often be found associated with other tuberculous lesions of the skin like lupus vulgaris and scrofuloderma. The condition impresses me as being due to the reaction of the skin to invasion by

tubercle bacilli. There are various types of lesions, depending on the intensity of the reaction. Some are typical lesions of lichen scrofulosorum; others show a slight elevation with central necrosis, while others show larger typical papulonecrotic tuberculids.

TUBERCULOSIS CUTIS APPEARING IN A SKIN GRAFT. Presented by DR. OSCAR L. LEVIN and DR. S. H. SILVERS (by invitation).

W. H., aged 24, a Chinese, was admitted to the Sea View Hospital on Sept. 30, 1932, with a condition diagnosed as pulmonary tuberculosis and tuberculosis of the right ankle. This ankle had been fused, and later a sinus developed which was repaired by a skin graft taken from the right thigh. He shows lesions of the skin of four months' duration in the grafted area. There is a hypertrophic, keloidal formation surrounded by a border ½ inch (1.27 cm.) wide, purplish, soft and covered with crusts and scales. Numerous ulcerated lesions, varying in size from that of a lentil to that of a pea, appear in the grafted area of the right ankle. The bases of the ulcers are flat and slightly infiltrated and undermine the borders.

Study of the histology revealed an increase in connective tissue throughout the subcutis, an increase in the number of dilated lymphatics and occasional groups of epithelial cells with giant cells. Treatment has consisted of irradiation with ultraviolet rays from the mercury vapor arc in quartz.

ERYTHEMA MULTIFORME HAEMORRHAGICUM BULLOSUM. Presented by DR. HERMAN GOODMAN.

N. LaC., a boy, aged 7, gives a history of lesions which developed on the buttocks, the knees, the dorsal surfaces of the feet, the elbows and the ears about one year ago. Later, the lesions spread over the legs and arms, and then to the face. He was treated by one physician for eczema. The condition improved somewhat, but the lesions on the buttocks never disappeared. Six weeks ago the patient had a very sore throat and was given 3,000 units of diphtheria antitoxin. The following week there was an eruption as marked as the one he showed on admission. He was further treated in an endeavor to build up his resistance, but with no results. Then the patient came to the Stuyvesant Square Hospital Clinic.

The past history of the patient reveals that he had whooping cough at the age of 2 and chickenpox at the age of 4. His tonsils were removed at the age of 5½, and he had croup one and a half years ago.

Physical examination showed a well nourished and well developed boy, not acutely ill. The gums are swollen and bleed easily. There is an eruption involving the extremities, buttocks, ears and face. The neck and torso are free from involvement.

The types of lesions are as follows: The primary lesion consists of a small vesicle, which in some areas becomes hemorrhagic. At the points of pressure there are papules which are keratotic and covered with adherent grayish scales. Some of these papules have small pinpoint hemorrhagic spots in their center; the larger papules show a coagulum of blood in their centers. The lesions on the buttocks are purplish gray, about the size of a five cent piece. There are no subjective symptoms.

There was no change in the lesions until suddenly on April 28, 1933, when an eruption of urticarial lesions with a vesicular hemorrhagic center occurred around the sites of the existing lesions. There was considerable itching.

The examination of the blood serum was positive to agglutination tests for Streptococcus haemolyticus. Secondary anemia was reported.

The large vesicles between the corium and basal cell layer are hemorrhagic. An inflammatory exudate composed of lymphocytes, polymorphonuclears and extravasation of blood is present.

The blood count showed a hemoglobin concentration of 71 per cent; white cells, 8,200; red cells, 3,900,000; polymorphonuclears, 49 per cent; lymphocytes, 46 per cent; mononuclears, 1 per cent; eosinophils, 4 per cent; color index, 0.9.

DISCUSSION

DR. SIGMUND POLLITZER: I do not think that this case can be called erythema multiforme. I should like to suggest urticaria pigmentosa as a possible diagnosis.

DR. HERMANN GOLDENBERG: It looks as though this is a case of erythema multiforme haemorrhagicum bullosum brought on a second time by the administration of antitoxin.

DR. ISIDORE ROSEN: I agree with the diagnosis as presented. The clinical picture of this case fits in very well with the disease. The unusual features are its chronicity and the persistence of the lesions in certain areas, but when one analyzes the individual lesions, they stand out as raised papules, some bullous and some with hemorrhagic centers, which gives them the appearance of herpes iris.

DR. EUGENE TRAUB: At the time I first saw this patient a few days ago, he presented a number of definite lesions on the iris, hands, forearms and arms, in addition to the other lesions. At that time there seemed to be little question that the case would fit in with the diagnosis of erythema multiforme or at least in the group of toxic eruptions. Tonight the appearance is not nearly so characteristic, as there are several different types of lesions. First, there are lesions which come and go quickly and which are definitely of a toxic nature. Second, there are the lesions on the hands and the forearms which are of a fixed type and which may or may not represent fixed toxic lesions. The third type of lesions are those to be found on the elbow and the knee, and they seem to be either keloids or hypertrophic scars. I do not believe that these are part of the picture, but represent injuries which have healed, leaving thickened scars.

DR. HERMANN FEIT: In regard to the chronicity of these lesions, I can report the case of a nun who had a similar condition for thirty-five years, so that the duration does not argue against that diagnosis.

DR. CHARLES WOLF: My impression is that this may be an early case of Duhring's disease. I saw a group of vesicular lesions on the region of the elbows. The parts affected are those commonly seen in early stages of Duhring's disease, viz., the posterior aspect of the forearms, the back of the knees and hands, the face and the ears. To confirm this, I suggest that a blood count be done in order to see whether there is marked eosinophilia, and also that the Jadassohn test be done.

MULTIPLE GUMMAS. Presented by DR. A. BENSON CANNON.

M. C., a man, aged 61, an Italian, gives a history of having had a chancre forty years ago, for which he received no treatment. The eruption for which he is presented began four or five months ago. Over the right buttock is a serpiginous, erythematous lesion about 5 inches (12 cm.) in diameter, crusted and ulcerating along the upper margin. Over the extensor surface of the right arm is a lesion 1 by 2 inches (2.5 by 5 cm.), similar in character. The entire tip of the nose presents an erythematous and oozing surface. Beneath the discharge the base is verrucous, with considerable surrounding erythema. There is a small lesion on the left shoulder.

The Wassermann reaction of the blood and the spinal fluid was negative. The biopsy report was of granuloma (probably syphilitic).

DISCUSSION

DR. LEO SPIEGEL: I agree with the diagnosis as presented. The lesion on the right arm is serpiginous, nodular and characteristic of late syphilis. The lesions on the nose and buttock, however, are not so definite, and suggest tuberculosis. Negative Wassermann reactions are frequently encountered in late cases. I should like to know if precipitation tests have been made. These tests are often positive when the complement fixation tests are negative—the Kline test more often than the Kahn.

Dr. Fred Wise: It is easy enough for any one to offer another diagnosis than the one presented. I offer the diagnosis of tuberculosis. Jadassohn has described tuberculosis of the skin in the aged. The lesion on the nose is much more suggestive of tuberculosis cutis than of syphilis. I am not prejudiced by a negative report of the serologic test. I should consider all the lesions tuberculous and not syphilitic, on the basis of clinical manifestations alone.

Dr. Hermann Feit: I agree with Dr. Wise. I thought of lupus verrucosus, which can progress in a serpiginous manner not unlike syphilis, although, of course, much slower.

Alopecia, Hypertrichosis, Psoriasis and Endocrine Dysfunction. Presented by Dr. David Bloom.

B. A., a woman, aged 36, gives a history of having been in good health until the age of 18, except for severe headaches during menstruation, which started at the age of 16. At the age of 18 she suddenly gained weight around the torso, but the extremities were not affected. Menstruation ceased at the same time. Soon afterward, the hair began to fall out, but returned in part, although for five years the alopecia has not changed in degree. Two years ago she received roentgen therapy over the left suprarenal region, as it was assumed, by the fact that the left kidney was enlarged downward and pushed inward, that a tumor of the suprarenal gland was present. Six weeks following the beginning of the roentgen therapy generalized psoriasis developed.

According to information received from the physician who treated the patient at that time, the patient had a marked hypertension and hyperglycemia which was corrected by the treatment. There was also a marked hypertrichosis of the face and the body which has improved considerably.

DISCUSSION

Dr. Louis Tulipan: There have been cases of this kind reported previously, in which it was thought that the condition was due to some involvement of the suprarenal glands. The patients lose the hair on the scalp, gain hair on the chin and gain weight, and have menstrual disturbances. This patient gives a history of amenorrhea since she was 18. I understand that she received some treatment with roentgen rays over the renal region. Following that the psoriasis appeared. Whoever treated her at that time probably thought of a tumor of the suprarenal glands.

Dr. Oscar L. Levin: I do not think that we should regard the case of alopecia as being due to psoriasis. Both conditions, the alopecia and the psoriasis, may be manifestations of the condition described by Cushing as basophilism. The patient shows other signs of pituitary disturbance, in the skin as well as in her general structure. Basophilism depends on the presence of small growths occurring within the pituitary glands and shows small areas with the characteristic basophilic staining cells. Frequently, roentgen examination of the skull does not disclose changes in the pituitary gland or in the sella turcica.

Dr. Louis Chargin: In patients suffering from erythrodermia associated with psoriasis, the loss of hair occurs from time to time. In a patient in the service of Dr. Rosen such loss of hair occurred on two occasions, when an exacerbation of the erythrodermia took place. In both instances the hair returned in the course of time as the process became less marked.

Granuloma Inguinale. Presented by Dr. A. Benson Cannon.

D. J., a woman, aged 42, a native of South Carolina, a laundress, entered the City Hospital on Sept. 20, 1932, complaining of ulcers of the mouth and the groin of five months' duration. The lesion of the mouth began as a painless sore on the inner wall of the right cheek. Two months later a painless ulcerating lesion developed in either groin and spread posteriorly along the perineum and along

the rectum. The patient says that she has no history of primary or secondary syphilis, although she has had two stillbirths.

Examination showed a linear ulceration on the inner aspect of the right cheek extending from the hard palate to the right corner of the mouth, about 1½ inches (3 cm.) wide, with rolled edges and a red granulating base. A similar condition involved the hard palate and the area between the left cheek and the left side of the jaw, and the entire soft palate extending onto the hard palate. The uvula was absent. Between the folds of the groin and the perineal regions and about the anus was a fanlike, sharply demarcated, elevated, irregular, granular, moist and bleeding surface. Some of the margins were rolled, and others on the right side were healed. Many islands of red granulation tissue were present. The liver was palpable below the costal margin.

The urine was normal. The Wassermann reaction of the blood was 4 plus. The Wassermann reaction of the spinal fluid was negative. The blood count showed an 80 per cent concentration of hemoglobin, 4,850,000 red cells, 9,200 white cells, 72 per cent polymorphonuclears, 25 per cent lymphocytes and 2 per cent eosinophils.

Smears taken from the mouth showed Donovan bodies, and those from the groin did not.

The patient received one course of ten injections of neoarsphenamine and bismuth. She also had potassium iodide, 30 grains (2.15 Gm.) three times a day. The Wassermann reaction of the blood became negative.

There has been no change in the buccal or inguinal lesions.

The patient is presented to show granuloma inguinale of the mucous membranes of the oral cavity associated with the same condition of the groin.

DISCUSSION

DR. A. BENSON CANNON: This is the second case which I have seen of granuloma inguinale with lesions in the mouth. We gave the patient antimony sodium thioglycollate and noted a remarkable improvement after the first injection.

DR. HOWARD FOX: The presence of granuloma inguinale in the mouth is unusual, although a number of cases have been recorded. At the time of my report on the disease a few years ago, there were records of 150 cases seen in the United States. This did not, however, give an adequate idea of the prevalence of the disease, especially in the South. In my series there were 9 patients presenting extragenital lesions, although in each of these there were also lesions in the groin or in the neighborhood of the genitals.

GUMMA OF THE SCALP (MULTIPLE). Presented by DR. A. BENSON CANNON.

T. B., a man, aged 69, Irish-American, a laborer, was admitted to the City Hospital on Feb. 29, 1933, for treatment of ulcers of the scalp and edema of the legs. Four nodules appeared on the scalp six months ago, and within two weeks they broke down, leaving ulcers which have shown no tendency to heal. The lesions were painless and produced no discomfort. The patient states that he had a chancre about thirty years ago, which was followed in one week by a generalized eruption. He was given ointment to rub into the skin and drops to take by mouth. He has had no treatment since.

Examination showed four ulcerating lesions on the scalp, one on the forehead and three on top, which varied in size from ½ to 1¾ inches (1.27 to 4.4 cm.) in diameter. They were oval, with beveled, red edges, and exposed the skull at the base. The one on the forehead was slightly red and bleeding at the margin. There was considerable edema of the left lower extremity with redness of the leg and some scarring over the anterior surface, probably from an old ulcer of the leg.

The urine was normal. The Wassermann reaction of the blood was 4 plus.

Treatment consisted of biweekly injections of luetin (0.5 cc., intracutaneously). The patient received a total of eighteen injections. After the first injection an

inflammatory reaction developed, surrounding all the lesions, especially the one on the forehead, and rapid healing began. Within two weeks all the lesions were entirely healed except for a slight central crusting in the lesions on the forehead.

A roentgenogram of the scalp showed an extensive, irregular area of lessened density measuring 3 cm. across. The same was true in the temple and occipital regions.

The case is presented because of the unusual number of lesions and the extensive destruction of the soft parts, with exposure of the bone. It is also presented to illustrate the effects of treatment with organic luetin on the clinical course.

DISCUSSION

DR. L. P. BARKER: This is one of a series of six patients with gumma who were treated with organic luetin. The product used was prepared from the testes of rabbits infected with the Nichols strain of Spirochaeta pallida. From 0.3 to 0.5 cc. was given intracutaneously twice a week. After the first injection, in the case presented, there was a marked inflammatory reaction about each lesion, followed by rapid healing. The lesions were practically healed after the third injection. Four weeks later a gumma developed at the site of injection of luetin, but healed again within a week.

The five other patients treated showed no improvement.

Most of my work with organic luetin has dealt with the cutaneous reactions in syphilis. I have tested about 300 patients to date. I have found a positive reaction of the skin in 8 per cent of those with primary cases, in 30 per cent of those with secondary cases, in 67 per cent of those with gumma of the skin, in 67 per cent of those with cardiac syphilis such as aneurysms and dilatation of the aorta, in 40 per cent of those with neurosyphilis and in 31 per cent of those with congenital syphilis. The patients with secondary cases showed a much higher percentage of positive reactions than those of most other observers, except Noguchi, who found 50 per cent of them positive; but he was working with cultures.

Other observers have noted focal reactions following the injection of organic luetin. Planner observed a focal redness with an increase in the swelling and pain in cases of gumma.

The colored girl presented tonight, with a gumma of the great toe, had a marked increase in pain and some increase in the size of the lesion following the first injection. The treatment was discontinued after the second injection, and mercury and iodides were given to relieve her symptoms.

DR. ISIDORE ROSEN: I think that the treatment with luetin in this patient should be discontinued. The area involved by the gummatous process is the skull, the outer table being already destroyed; and serious complications might arise if the destruction were permitted to extend to the inner table. The late Dr. Fordyce had in his collection two or three examples of gumma involving the skull which produced hemorrhage and death of the patient. I therefore suggest that this patient be treated with more active remedies for syphilis than luetin.

DR. A. BENSON CANNON: We have been aware of the rapid destruction of tissue in gummatous lesions involving the mucous membranes. I have observed the perforation of the hard palate and the destruction of the bridge of the nose within twenty-four hours in cases in which no treatment is given. In the present case the process is limited to the skin of the scalp and the periosteum, and the lesions are perfectly visible, so that with careful observation we have felt that there was no danger of destruction of the bone. Besides, the improvement in the lesions following the first injection of organic luetin encouraged us to continue its administration. All that we can hope to accomplish by treatment of this patient is to arrest the process, a thing that we feel has already been accomplished. I do not believe that the bone will ever be covered with tissue, even though one might administer one of the heavy metals and arsphenamine over a long period of time. The only means I know of for covering the exposed bone is by plastic surgery.

LYMPHOBLASTOMA (?). Presented by DR. A. BENSON CANNON.

A. W., a woman, aged 49, a Russian, was readmitted to the City Hospital on March 6, 1933, because of a recurrence of generalized dermatitis. She had been admitted one year before with a universal erythematous, scaly and pruritic dermatitis with a few areas of infiltration over the back varying in size from that of a pea to that of an almond, of eleven months' duration. The rash had begun on the face, ears and neck, gradually becoming universal. She had had frequent attacks of asthma. On friction or scratching urticarial papules developed.

A biopsy specimen taken before admission was said to have suggested the pathologic changes seen in mycosis fungoides. The patient was anemic (with a hemoglobin content of 60 per cent, 3,000,000 red blood cells and nonprotein nitrogen, 28 mg.). The Wassermann reaction of the blood was negative. Roentgen examination of the heart and lungs gave negative results. The urine was normal. The patient was given three transfusions of blood, treatment with generalized ultraviolet rays, typhoid vaccine intravenously, cod liver oil and various ointments locally. She gained 37 pounds (16.9 Kg.) and was practically well when discharged six months later.

When admitted on March 6, 1933, she again presented a universal dermatitis similar to that of her first admission, except that there were numerous areas of lichenification varying in size from that of a pea to that of a twenty-five cent piece, which were probably the result of scratching. Biopsy of a specimen of the skin showed a chronic inflammation.

The blood count showed a hemoglobin content of 80 per cent; red cells, 3,200,000; white cells, 8,000; polymorphonuclears, 92 per cent; lymphocytes, 6 per cent, and mononuclears, 2 per cent.

The patient was given calcium gluconate and peptone intravenously (twelve injections), typhoid vaccine intravenously (ten injections) and various ointments locally. She also received generalized ultraviolet therapy. There has been considerable improvement in her condition.

The patient is presented to show universal dermatitis simulating early mycosis fungoides.

DISCUSSION

DR. A. BENSON CANNON: The histologic examination of one of the lesions revealed a picture similar to that found in the premycotic stage of mycosis fungoides. The patient was anemic when seen at the City Hospital a year ago. At that time she was given three transfusions of blood and a diet high in calories. The blood count promptly came to normal. She gained 35 pounds (15.9 Kg.) and was discharged as cured. The patient is now shown with a perfectly normal skin, soft and velvet-like, although a few months ago she had a recurrence of the itching associated with asthmatic attacks, followed by a generalized eczematized condition of the skin without nodules. We have refrained from giving her roentgen treatment, feeling that as she responded to other forms of treatment in the beginning, we would try the same remedies. She is now anemic, but we have not given her a transfusion. She has received calcium and typhoid vaccine intravenously. Since March 6, the date of admission, the condition has improved remarkably; the skin over the trunk is almost normal. I should like your opinion as to whether this is really a case of mycosis fungoides or some other member of the lymphoblastoma group, or just a simple allergic dermatitis.

DR. ISIDORE ROSEN: I am inclined to agree with the diagnosis of lymphoblastoma. The fact that the eruption did not improve or disappear on admission to the hospital would, in my opinion, speak against the diagnosis of an allergic dermatitis. The extreme itching without evidence of scratching is another point in favor of the former diagnosis. I have under observation a patient with an almost identical eruption, with paroxysmal attacks of unbearable pruritus, which are relieved the moment she removes her clothing and rests in bed, but which recur as soon as she rises and dresses. This case was proved to be mycosis fungoides by histologic examination.

DR. HERMAN GOODMAN: Are we to believe that roentgen rays are no longer essential in the treatment of mycosis fungoides?

DR. SIGMUND POLLITZER: I scarcely venture to express an opinion in view of the fact that Dr. Cannon has had this patient under observation for a year or more, and is not sure of the diagnosis. The impression the case makes on me is that we are dealing with a case of mycosis fungoides. I should not make that definite, but rather as a probable diagnosis.

LYMPHANGITIS COMPLICATING TINEA (?). Presented by DR. EUGENE F. TRAUB.

K. C., a woman, aged 50, born in the United States, states that an eruption first appeared on the right palm six months ago. She was first seen at the Stuyvesant Square Hospital early in March, 1933. The eruption on the palm has not changed much in appearance, except that a few small fissures have healed. At no time have any vesicles or pustules been present. She was examined for ringworm with negative results. Tests with trichophytin in dilutions ranging from 1:5,000 to 1:20 were negative or only slightly positive. The Wassermann reaction was negative.

The blood count showed a hemoglobin content of 86 per cent; red cells, 3,700,000; white cells, 5,200; polymorphonuclears, 45 per cent; lymphocytes, 42 per cent; monocytes, none; eosinophils, 11 per cent, and basophils, 2 per cent.

The diagnostic tests with trichophytin were performed on March 10, 1933. On the following dates the patient received therapeutic injections of trichophytin: March 13, 1933, 1:20 (right arm); March 17, 1:20 (right arm); March 27, 1:20 (right arm); March 31, 1:10 (left arm); April 5, 1:10 (left arm).

On April 10, a lymphangitis appeared in the right arm near the axilla and spread downward toward the wrist. This definitely followed the last injection of trichophytin, although the preceding injections had been given into the right arm. On April 14 another injection of trichophytin in a dilution of 1:10 was given in the left arm. On April 19 the lymphangitis was worse. On April 24 an injection of trichophytin was given, and on April 28 the lymphangitis was worse.

DISCUSSION

DR. EUGENE TRAUB: Unfortunately, this is not a case in which the diagnosis of tinea is established. It is presented only because of the peculiar lymphangitis which appeared on the right arm and has remained for about three weeks. At no time has there been any apparent infection of the palm of the right hand, no vesicles or pustules and no pronounced inflammatory reaction. There have been a few tiny fissures, but none of these seemed to be infected. The lymphangitis was first noted well up in the axilla and has extended downward toward the forearm where it has persisted, as may be seen this evening. The lymphangitis was first noted after an injection of trichophytin which, however, was given in the left forearm. Whether there is a connection between the two, I am not certain, but there seems to have been a flare-up following each injection of trichophytin subsequent to the appearance of the lymphangitis. I have seen a number of cases in which a similar lymphangitis complicated a case of tinea, and I am anxious to know whether other members have had similar experiences.

DR. CHARLES WOLF: These patients are often treated for tinea for a long while. This case seems to be one of psoriasis. There are dry, erythematous, scaly, slightly infiltrated lesions, sharply circumscribed in the palm, and also similar patches on the lateral surfaces of the fingers and no history of vesiculation. I believe that this could be proved by biopsy to be a case of psoriasis.

DR. LOUIS TULIPAN: I agree with Dr. Wolf. The eruption is dry, with no vesicles. One can scrape off the micaceous scales. The patient says that it scales continuously. There is no pitting of the nails. The lymphangitis might have been due to fissuring with some infection, as frequently happens with lesions on the feet on which there is cracking of the webs of the toes. Frequently, lymphangitis

will start some distance above the focus of infection, owing to the fact that the infection enters the deep lymphatics. This patient also gave a history of having had tender nodes in the axilla, which would accompany an infection along the arm. These cases usually end in solid edema, provided these are recurrent attacks.

DR. OSCAR L. LEVIN: As for the occurrence of lymphangitis with tinea infections, I believe it is common knowledge that lymphangitis and lymphadenitis are fairly common complications of tinea infections. There are also cases of chronic lymphangitis, as, for example, chronic edema in one or both legs. I have in mind a patient with a marked swelling of both legs which was due to chronic edema and which disappeared completely after the ringworm infection of the feet was cured.

DR. ISIDORE ROSEN: A diagnosis of psorias must be considered. The lymphangitis in this instance is probably due to the injection of trichophytin. There are certain patients who react strongly to all types of vaccines.

DR. LOUIS CHARGIN: Psoriasis of the hands is not uncommon, and in spite of psoriatic fissures, I have never seen a complicating lymphangitis. On the other hand, dermatophytosis in this location is at times associated with lymphangitis. These facts speak in favor of the diagnosis of dermatophytosis in this case.

DR. EUGENE F. TRAUB: As I stated before, we have not established the diagnosis of tinea in this case. When I first saw the patient I doubted whether the eruption on the palm was related to tinea. Microscopically, we were unable to find either mycelium or spores. The tests with trichophytin were only weakly positive, and anything short of a strong positive I consider doubtful. On the other hand, I do not believe that the eruption suggests psoriasis, nor is there confirmatory evidence elsewhere on the patient's skin for such a diagnosis. The patient gave no history to substantiate such an idea. The only alternative diagnosis that I should consider would be an erythematosquamous eczema which, because of its location on the palm, shows an unusual amount of thickening.

MYCOSIS FUNGOIDES. Presented by DR. A. BENSON CANNON.

M. S., a white woman, aged 64, Irish-American, states that the condition began in February, 1930, as circles and semicircles ranging in size from that of a ten cent piece to that of a half dollar, located on the abdomen. They increased in size and number very slowly. They did not itch for one year. The condition then began to progress until the face and body were covered. In April, 1931, she began taking potassium iodide, 15 drops, three times a day. Large pustules formed on the face, and the treatment was discontinued. During the summer of 1931, the sunshine produced an improvement, especially of the condition of the face, but since October, 1932, the condition has been very bad, involving parts of the entire body, including the scalp, palms and soles. Four months ago a lump appeared between the eyebrows and increased in size until, at the time of admission, it was the size of an English walnut. The glands in the axillae, groins, back of the knees and on the back of the neck had been enlarged for one year. They became larger and smaller at intervals, and at times there was a little fever. The itching was almost unbearable.

Examination showed a well developed and well nourished woman with a worried, distressed expression, restless and constantly scratching. The skin was universally thickened, red and scaly, with infiltrated, raised plaques ranging in size from that of a pea to that of a palm. Between the eyebrows was a red nodule almost the size of an English walnut, firm and movable with the skin, but not tender. The feet and ankles were a little swollen. All of the superficial glands were enlarged. Those in the inguinal regions and the right posterior cervical glands were the size of an English walnut and larger. The liver and spleen were not felt. The blood pressure was 165 systolic and 98 diastolic. The heart was enlarged, the second aortic sound being greater than the second pulmonic sound and accentuated. There were no murmurs or irregularities. The pupils were equal and reacted well to light and in accommodation. All deep reflexes were active and equal on both sides.

The patient received three fourths of an erythema dose of unfiltered roentgen rays over the entire body and one half of an erythema dose on the scalp. This was given about three weeks ago, and there has been a remarkable improvement in the condition. The patient received four injections of old arsphenamine, a total of 0.7 Gm.

A test for arsenic in the blood showed 0.53 mg. per hundred cubic centimeters of dry specimen.

The patient is shown to illustrate the difficulty of making a diagnosis of mycosis fungoides in the early stage of the disease. The case was seen and studied at several dermatologic clinics and presented before one dermatologic society, and, according to the history of the patient, the diagnosis was variously made of pityriasis rosea, parapsoriasis and eczema. Sections of the skin, taken at two different clinics, were said to have shown no evidence of mycosis fungoides.

DISCUSSION

DR. A. BENSON CANNON: Mycosis fungoides was considered as a possible diagnosis at two clinics, but it was ruled out because the laboratory report of the tissue removed from the skin revealed a simple inflammation, namely, eczema. The patient received about forty roentgen treatments, large quantities of arsenic by mouth and various antipruritic remedies, without permanent relief. Because of the absence of any evidence of systemic disease under careful physical examination (including roentgen examination of the mediastinal glands and the normal blood count) and the absence of enlargement of the liver or spleen, we concluded that the patient was suffering from mycosis fungoides. The large tumor the size of an English walnut between the eyebrows was removed, and the pathologic report confirmed our suspicion of mycosis fungoides. We have just completed a course of roentgen therapy. We can see the remarkable improvement in the appearance of the patient's skin at the present time, as compared with the photographs presented with the patient. Our purpose in exhibiting the patient is to illustrate the difficulty we all have in making a diagnosis of mycosis fungoides in the early stages of the disease and also to show the beneficial effects to be derived from using comparatively large doses of roentgen rays (three quarters of an erythema dose) instead of the small doses (one quarter of an erythema dose) which she had previously received. Only the tumor between the eyebrows failed to respond to the three quarters of a unit dose and required one and one-fourth units before it melted away. We also administered small weekly injections of arsphenamine intravenously.

DR. CHARLES WOLF: In many cases the skin of mycosis fungoides in the prefungoid stage is shiny and glazed. The itching is intense, without showing excoriations commonly seen in neurodermatitis; the latter might be considered a differential point. Large doses of roentgen rays are preferable to fractional doses. My custom is to give an erythema dose filtered with 3 mm. of aluminum to each area. The response is prompt, and one does not have to repeat the treatment in that particular area for a long while. We have patients in the hospital presenting large tumors, which have melted away under one unit of roentgen ray. It is surprising to see the duration of freedom from itching after large doses.

DR. HOWARD FOX: I should like to hear from the Chairman regarding the experience of the late Dr. Fordyce in treating mycosis fungoides by a combination of roentgen rays and arsphenamine. As I recall it, Dr. Fordyce obtained some favorable results by this procedure.

DR. A. BENSON CANNON: We had one patient who had as many as 300 tumors of mycosis fungoides, some as large around as a saucer, involving the entire breast. She was treated with three-quarter and two erythema doses of intervals. We found by experience that the tumors would flare up with smaller doses of roentgen rays and increase very rapidly in size, but when each tumor was given a massive dose they invariably melted away rapidly. Much to our surprise roentgen rays unfiltered, followed by small doses of arsphenamine given at weekly

this woman made a complete recovery, gained about 40 pounds (18.1 Kg.) and is still well, although it has been about ten years since her last treatment. I believe that Dr. Fordyce thought that treatment with roentgen rays, followed with arsenic in the form of arsphenamine, gave the best results in the treatment of mycosis fungoides.

DR. EUGENE F. TRAUB: About eight years ago a patient was referred to me whose condition was diagnosed as mycosis fungoides by Dr. Fordyce and substantiated microscopically by Dr. Satenstein. The patient had received large doses of arsenic and roentgen rays, and when I first saw him it was no longer possible to make a diagnosis of mycosis fungoides, the picture suggesting an exfoliating dermatitis from arsenic. I treated him for the exfoliating dermatitis, which cleared up very slowly, but which, when once entirely cured, has not returned to the present time. It is probably fair to assume that Dr. Fordyce's diagnosis with the microscopic changes were correct, and that this represents a case of mycosis fungoides which has at least been arrested if not cured by the use of the roentgen rays and arsenic.

DR. HERMANN GOLDENBERG: Professor Herxheimer made the statement to me that the combination of intravenous injections of arsenic together with treatment with roentgen rays was an infallible cure for mycosis fungoides, at least temporarily.

KERATODEMIES PUNCTUÉES (MANTOUX): KERATODERMIA DISSEMINATA PALMARIS ET PLANTARIS (BUSCHKE AND FISCHER). Presented by DR. HERMANN FEIT.

H. O., a woman, aged 33, born in Norway, a physical therapeutist, a resident of the United States for five years, had always been in good health. She noticed an eruption about one year ago. There has been no sensation connected with the eruption. Disseminated over the palms and soles are multiple, small, miliary, keratotic papules which are hard and translucent. In some places these papules are replaced by fine depressions. The newly developed papules have the size and appearance of sago grains. This eruption, according to Darier, has the character of a nevus. The results of the examination of the blood for arsenic have not been reported. The biopsy report has not been received.

LICHEN PLANUS ATROPHICUS AND LICHEN PLANUS IN A SCAR. Presented by DR. OSCAR L. LEVIN and DR. S. H. SILVERS (by invitation).

J. T., a man, aged 54, noticed flat lesions on the ankles about three months ago. Since that time the lesions have appeared over the entire body. They are itchy, and consist of discrete and confluent patches varying in size from that of a pea to that of a dollar. In many places the patches form ringlike lesions, with pigmentation and atrophy in the center. The lesions consist of flat, violaceous papules with fine scales. The distribution resembles that of pityriasis rosea. On the left side of the patient's back is a large scar, resulting from a burn, that has several lesions on it. On both thighs are atrophic areas with pigmentation in the center of the lesions.

LUPUS VULGARIS. Presented by DR. OSCAR L. LEVIN and DR. S. H. SILVERS (by invitation).

H. S., a woman, aged 68, white, was admitted to the Sea View Hospital with a condition diagnosed as chronic pulmonary tuberculosis and lesions of the skin, of many years' duration. She has been troubled with varicose veins for ten years and has had treatment by injection. She has had tuberculosis of the lungs for fifteen years or more. The lesions of the face were first noticed about six years ago. The lesions appeared on the right side of the face and neck. The patient's neck shows an irregular scar, resulting from the removal of the glands. On the cheek is an infiltrated lesion, ¾ by 1 inch (1.90 by 2.5 cm.), which is red and

slightly edematous, the center of which is covered with a firm crust the size of a pea. The right lower part and side of the ear show scars and atrophy. The lobe of the ear is red, infiltrated, edematous and covered with scales and crusts. There are also numerous scars, scales and crusts on both legs. The lower third of the left leg shows atrophy, redness and scaling and crusting. There is no open lesion, but there is irregular pigmentation on both legs. The patient reports that she had an operation on both legs twelve years ago.

Examination of the lungs showed a chronic productive tuberculosis of the apex of the left lung. The sputum test and the Wassermann reaction proved negative. Examination of the urine showed evidence of mild nephritis. A study of the histology of the lesions of the leg revealed no change in the epidermis. The derma was thickened and contained many large aggregations of round cells, vascularized by many capillaries. There was no endothelial proliferation, no necrosis or giant cells and no tubercle formation.

ACRODERMATITIS CHRONICA ATROPHICANS. Presented by DR. A. BENSON CANNON.

P. G., a man, aged 60, a porter, was admitted to the City Hospital on April 24, 1933. He states that sixteen years ago he noticed several white, scaling, nonitchy patches on the back of the left hand. He then noted dryness and scaling of both elbows followed by a gradual thinning and bluish discoloration of the hands and forearms. Four years after the onset on the hands, a similar condition appeared on the feet. For ten years the skin of the palmar surface has been thickened, dry and scaly.

Examination showed the skin on both hands and forearms, to about 2 inches (5 cm.) above the elbows, to be atrophic, cyanotic and dry, with some scaling. The veins were readily visible, as if seen through tissue paper. The skin was very lax over the extensor surfaces of all joints. This condition ended abruptly at the palmar surface of the hand, where the skin was decidedly thickened, dry, fissured and scaly. In several of the flexures the fissures revealed a slight hemorrhage. The lower extremities and the lower half of the trunk showed a similar condition of atrophy, cyanosis and laxity of the skin. The soles were covered with normal-appearing skin. Over the extensor surfaces of the extremities were several small, circumscribed, slightly depressed, white patches about 3 cm. in diameter which invaginated and admitted the tip of the little finger.

LOS ANGELES DERMATOLOGICAL SOCIETY

L. F. X. WILHELM, M.D., *Secretary*

Regular Meeting, Feb. 14, 1933

SAMUEL AYRES, JR., M.D., *in the Chair*

FUNGUS INFECTION WITH INVOLVEMENT OF THE BONE. Presented by DR. H. SUTHERLAND CAMPBELL.

Mr. H. F., aged 26, complained of multiple ulcerated lesions of the head and legs. The lesions on the legs have been present for fourteen years, while that on the scalp has existed for five years. No history of injury was obtained, nor were there any subjective symptoms. Some of the lesions on the legs have healed, but that on the scalp has never completely healed, there being periods of alternate healing and breaking down.

On the left temple is a small ulceration which at times manifests itself by proliferating granulomatous tissue; at other times it is covered with a crust. There is a constant tendency toward healing, only to be followed by a tense, painful swelling, which rapidly breaks down and discharges seropurulent material. There are massive scars over the spine, both ankles and arms and the right hand, the forefinger of which shows a destructive contraction. Roentgenograms revealed changes in the bone underlying these scarred areas. The roentgenogram of the skull was particularly interesting for it showed a large, sharply defined, bony defect the size of a pea, involving both the inner and the outer table of the skull. Two roentgenologists made a diagnosis of "bullet wound of the skull" from the roentgen plates.

Numerous smears were negative, as was the Wassermann reaction of the blood. Microscopic sections revealed only granulomatous changes. From cleansed pieces of tissue, two fungi were isolated, one apparently a saprophyte. A mouse was inoculated with a "white" fungus obtained, with the production of an abscess in the groin, in smears from which yeast forms could be seen. No organism could be recovered on subcultures. Several more mice and rats have been inoculated recently.

DISCUSSION

DR. H. SUTHERLAND CAMPBELL: Two new nodules formed subcutaneously while the patient was receiving sodium iodide therapy. They did not break down, but involuted rapidly and in three or four days disappeared. There has been no great change in the lesion on the side of the head, which has continued to heal, only to break down again later. The swelling and tenderness, however, have disappeared, and there is much less discharge. In roentgenograms taken after six or eight weeks there is a sharper outline in the skull along the margins of the perforation, which the roentgenologists say is an indication of attempted healing. The hole will probably persist, unless spicules of bone are implanted so as to form a bridge for the periosteum to grow over.

FUNGUS INFECTION. Presented by DR. H. SUTHERLAND CAMPBELL.

Mrs. F. F. P., aged 39, complained of multiple scars and ulcerations of the skin, of ten years' duration. The primary lesions began as small subcutaneous nodules, which were slightly painful. These lesions broke down and discharged, and healing followed. Other lesions, however, continued to appear elsewhere and go through the same cycle. Examination disclosed discrete, erythematous, nodular, ulcerative lesions and healed scars, distributed only over the thighs and legs. Microscopic sections were granulomatous. Scrapings and smears on Sabouraud's medium were negative. Pieces of tissue cleansed and planted on the same medium gave a mixed culture in two of five tubes inoculated. From this mixed culture three separate fungus organisms have been recovered, and studies are being made to determine their pathogenicity. The condition of the patient is improving rapidly with the administration of iodide intravenously.

DISCUSSION

DR. H. SUTHERLAND CAMPBELL: These lesions are clinically indistinguishable from a nodular tertiary syphilid. In fact, it was so diagnosed by myself and two other persons. The patient's history indicates that she has been given antisyphilitic therapy at intervals over a long period without apparent healing while under treatment. This is difficult to understand as I still believe that the therapeutic test is the most absolute in the case of syphilis. She has had this condition for ten years, and was told by a dermatologist some time ago not to have a specimen taken for biopsy as it would aggravate the condition. Consequently, it took me a long time to persuade her to have the specimen taken for biopsy. We finally obtained a specimen, and from the tissue planted on Sabouraud's medium obtained mixed cultures from which three separate fungi were isolated. As this phe-

nomenon has occurred to me rather frequently of late, I put it down to faulty technic, and, imagining the laboratory air to be polluted, took the case to a different place to make further plantings, employing every precaution against contamination, but with the same results. As this procedure has obtained in several other instances, I am fully persuaded that some of the so-called contaminants in these cases are not contaminants but are present either in symbiosis or, as in the plant world, "following infestations," gaining their respective footholds only after the soil has become modified by the essential fungus.

DR. STANLEY O. CHAMBERS: Actinomycosis would be my diagnosis. There is a similarity often seen between late syphilids and actinomycosis.

DR. SAMUEL AYRES, JR.: How much antisyphilitic therapy had the patient received previously?

DR. H. SUTHERLAND CAMPBELL: We made many direct smears, but there were no positive findings. Her history indicates that she has had antisyphilitic therapy on several occasions during the past ten years. More recently she has had a few weeks of therapy at a downtown clinic, first, injections into the veins and then into the hips. She received only two intravenous injections, because they made her "very sick." She has been told on several occasions that she has syphilis, and each time has been given therapy with no change in the lesions. The result is that she eventually left the clinics feeling somewhat hopeless.

DR. SAMUEL AYRES, JR.: How long has she taken iodides?

DR. H. SUTHERLAND CAMPBELL: Three weeks.

DR. SAMUEL AYRES, JR.: I should suggest another check of the blood after provocative stimulation. I cannot get away from the appearance of syphilis in the superficial scars on the thighs and the peripheral activity.

DR. H. SUTHERLAND CAMPBELL: The scars on the thighs impressed me as being the biggest argument against syphilis, for within the discolored area there are three or four sharply demarcated, deep, white scars, which are rather foreign to the usual scarring one finds in syphilis.

DR. STANLEY O. CHAMBERS: Were microscopic sections made from the biopsy specimen?

DR. H. SUTHERLAND CAMPBELL: Sections were made for histopathologic examination, and others were stained for fungi. The former manifested, in the main, a somewhat typical granulomatous structure. Those stained for fungi were all negative. I may add that I gave the patient bismuth at the onset, as I felt that there was something suggestive about the lesion on the thigh, but there was no resultant healing. On the contrary, forty-eight hours after the patient received an intravenous injection of sodium iodide the lesion from which a specimen was taken for biopsy was almost healed, and the ulceration itself was vastly improved.

KAPOSI'S HEMORRHAGIC SARCOMA. Presented by DR. SAMUEL AYRES, JR.

Mr. B. B., aged 65, a tinner, born in Russia, has an eruption on the hands and feet of a year's duration. This condition first manifested itself on the feet and later on the hands. About a year and a half ago his feet perspired excessively, especially at night, and the patient used to rub them. After the hyperhidrosis stopped, the lesions appeared. He has had some treatment with radium for the lesions on the feet, and recently roentgen radiation has been applied to some of the lesions, but without apparent change. A biopsy was made, and half of the lesion was ground up in physiologic solution of sodium chloride and passed through a porcelain filter. The filtrate was reinjected one week ago, in amounts of 0.3 cc., into each of three areas on the upper part of the arm. The histologic section revealed a new formation and dilatation of the capillaries, with a marked endothelial proliferation. New connective tissue, together with free blood cells, and considerable pigment are present. There is a rather marked round cell infiltrate about the blood vessels.

Examination disclosed typical slate blue to purple nodules and tumors involving the toes, feet, ankles, the palm of the left hand and the back of the right hand. A small nodule the size of a pea was present on the right cheek. Some of the lesions had a warty, verrucous appearance, particularly those on the toes and on the sides of the feet.

DISCUSSION

DR. SAMUEL AYRES, JR.: It does not seem to be definitely established whether this is a true malignant condition or an infectious granuloma. I tried auto-inoculation by filtrates obtained from excised tissue. The patient was inoculated a week ago, and it is too soon to expect any results, but we are watching. We have just begun roentgen therapy, which I presume is about the only thing that will produce any benefit, and that will probably be only temporary.

DR. IRVING O. BANCROFT: I presented this man about a year ago. At that time I used radium to treat one lesion on the foot, which has entirely disappeared except for a slight rim around it.

DR. KENDALL P. FROST: As a matter of terminology, I believe that this case should have been presented as one of multiple pigmented hemorrhagic sarcoma (Kaposi). In regard to treatment, while the roentgen rays may influence the lesion somewhat, I do not believe that the ultimate course of the disease will be changed. The patient with this disorder whose case I reported in 1921 had lesions localized on the hands and the lower parts of the legs for several years, but ultimately succumbed to the disorder. Dr. Ormsby, under whose care he was, reported to me that autopsy showed multiple lesions throughout the gastro-intestinal tract.

PEMPHIGUS VULGARIS AND FOLIACEUS. Presented by DR. STANLEY O. CHAMBERS.

Mr. L., a white man, aged 28, born in Rhode Island, has been troubled with an eruption on the skin since 1928. At that time an eruption characterized by the formation of blebs on the flexor surfaces of the forearms occurred. Blebs gradually appeared elsewhere on the body, but at no time was there any involvement of the mucous membranes. The patient was first seen on Sept. 20, 1932. The Sulzberger-Wise treatment for pemphigus was instituted, which caused temporary improvement.

On examination, the patient presented numerous bullous lesions distributed over the trunk, extremities, face, neck and scalp. These lesions were in all stages of evolution. Of particular interest was the presence of a seborrheic dermatitis involving the scalp, face and ears. The lesions of seborrheic dermatitis were patchy and well marginated and appeared to be slightly indolent. There were no dilated follicular orifices, atrophy or telangiectasia.

DISCUSSION

DR. NELSON P. ANDERSON: I think that this case belongs to the Senear-Usher type of pemphigus, as the patient presents evidence of a lupus erythematosus-like eruption on the face and a seborrheic dermatitis on the chest. I should like to see him treated with a gold preparation. There seems to be some discussion as to whether this group of cases belongs to the Senear-Usher type of pemphigus, or whether some of them are lupus erythematosus, the latter opinion being held by Wise.

DR. CHARLES R. CASKEY: Dr. Scholtz had a similar case, not quite so severe, in which a gold preparation was given for a considerable period without any improvement.

DR. SAMUEL AYRES, JR.: I believe that this case has some of the aspects of lupus erythematosus, especially in view of the fact that the lesions about the face have never cleared up. They certainly have a seborrheic feeling and a definite stippling, and there is a dilatation of the seborrheic orifices. I agree with Dr. Anderson and suggest the use of a gold preparation. I saw a case of the Senear-Usher type some months ago. It began as a typical dermatitis

herpetiformis and then switched over to the Senear-Usher type of pemphigus with warty seborrheic plaques on the back and chest. Now typical pemphigus vulgaris has developed with a definite Nikolsky sign. We have just started treatment with a gold preparation.

DR. H. C. L. LINDSAY: I have been using a solution of gold tribromide recently, administering it orally. Two cases of lupus erythematosus have cleared up with that treatment. This remedy has been used for psoriasis by Dr. Noxon Toomey, without any untoward effects from its use. If it will relieve the condition by oral administration, then it will be a boon.

A CASE FOR DIAGNOSIS. Presented by DR. STANLEY O. CHAMBERS.

Mr. C., a Filipino, single, aged 35, has been in California since 1920, and in Los Angeles for the past five years. About July, 1931, an indolent, subcutaneous nodule appeared on the right side of the neck. This nodule broke down two months later. Three months thereafter, a papular eruption developed, distributed over the extremities, particularly on the flexor surfaces. Later, similar lesions appeared on the trunk, particularly on the back. All of the lesions have been asymptomatic. In November, 1931, a penile lesion with associated lymphadenitis developed. The Wassermann reaction was 4 plus. The patient received about seven injections of neoarsphenamine and twenty injections of bismuth during 1932.

The urine, blood and spinal fluid were normal. A roentgenogram of the chest revealed pulmonary fibrosis, but no demonstrable tuberculosis. Inoculation of a guinea-pig with material from a cervical lymph gland gave negative results. The patient presents a considerable number of papulonodules on the extremities, particularly on the flexor surfaces. These lesions vary from 2 mm. to 0.5 cm. in size, and are well elevated above the surface of the skin. There is no inflammatory element. A few similar lesions can be noted on the sides of the trunk. In many of the older lesions a central atrophic depression is present. There is no pain or tenderness on pressure, nor is any central necrosis present. The lesions are firm and are not fixed to the subcutaneous tissue. In color they exhibit a light to a moderate brown.

DISCUSSION

DR. STANLEY O. CHAMBERS: This case is presented for diagnosis. Two or three interesting points are raised. The patient has been adequately treated for syphilis, without any influence on the cutaneous picture. Two pieces of tissue were removed and examined microscopically. The histopathologic picture in both instances was that of fibroma. We are interested chiefly in the possibility of sarcoid. The histologic picture of fibroma does not necessarily eliminate the possibility of late sarcoid.

DR. CHRIS HALLORAN: Clinically, I think that one has to entertain the possibility of papulonecrotic tuberculid.

DR. SAMUEL AYRES, JR.: My feeling is that it is a tuberculid. On healing, the lesions have necrotic pits, although I did not see any lesions undergoing necrosis. Another possibility is that of leiomyoma.

DR. NELSON P. ANDERSON: The section shown seems to be fairly typical of neurofibroma. There are whirls and interlacing strands of fibrous tissue. Since hearing Dr. Ayres suggest leiomyoma, I think that it might be well to have special stains made to see whether smooth muscle fibers are present.

DR. H. SUTHERLAND CAMPBELL: I think of sarcoids and acne necrotica as falling into the same common group, viz., tuberculids. There are forms that give somewhat hybrid pictures, and this probably falls into that classification. The dominant feature to me is the finding of certain lesions with definite small, rounded, depressed scars having blackish margins.

DR. STANLEY O. CHAMBERS: Clinically, the condition is not unlike lichen planus. I was not entertaining the possibility of a papulonecrotic tuberculid in the absence of a necrotic papule. The lesion seems to produce atrophy without apparent necrosis.

L. F. X. WILHELM, M.D., *Secretary*

Regular Monthly Meeting, April 11, 1933

SAMUEL AYRES, JR., M.D., *in the Chair*

ARSENICAL PIGMENTATION. Presented by DR. IRVING R. BANCROFT.

In August, 1932, while receiving treatments of neoarsphenamine and mercury, having had twelve injections of each, a generalized dermatitis developed, with subsequent exfoliation. As peeling ceased, the present pigmented macular rash came on gradually. At present, there is a generalized, oval-shaped, pigmented rash over the whole body, except on the face and the feet, with very few on the chest. As a rule, these are oval and follow the cleavage lines of the body.

DISCUSSION

DR. KENDAL FROST: The eruption is very interesting. In view of the definite ring formation and the presence on the glans penis of three small erythematous, shiny papules, it seems feasible to consider at least the possibility of its being lichen planus or one of the arsphenamine eruptions of the lichen planus type.

DR. MOSES SCHOLTZ: I do not think that this patient presents the usual picture of arsenical pigmentation. The lesions, in this case, are irregular and arciform; there is no suggestion of superficial atrophy or scarring, and they show a definite predilection for the upper and lower extremities. I believe that the pigmentation in this case is subsequent to the healed lesions of secondary syphilis. Besides, arsphenamine, which is the only drug used in treating the patient, is not as likely to leave pigmentation as is solution of potassium arsenite.

DR. SAMUEL AYRES, JR.: The condition impresses me as a fixed pigmentation, and it would not surprise me to see some atrophy in these lesions. In fact, some of them look atrophic now.

ERYTHEMA MULTIFORME (BACTERIAL). Presented by DR. SAMUEL AYRES, JR.

J. W. L., aged 28, has had the present eruption on the palmar surface of the hands for five days. The past history discloses that fifteen or twenty years ago, while he was living in Phoenix, Ariz., an eruption would occur on the backs of the hands and face (nose) whenever he was exposed to sunlight for any period of time, e. g., more than one hour. The present scarring of the nose dates from that time. Even now, he realizes that he is very sensitive to sunshine and avoids it as much as possible. This past winter he has had a continuous cold. A severe catarrhal process of the nose and head has long been present. He had an attack of pleurisy two weeks ago which lasted for three or four days. The deformity of the right hand is due to the destruction of the extensor tendons by a roentgen burn fifteen years ago. Last Thursday, the patient first noted a redness of the palms which was followed shortly by swelling and edema. Marked burning was present.

Examination showed that the greater part of each palmar surface was involved, but particularly the thenar and hypothenar areas, which were purplish red and swollen and quite warm. There were many small nodular lesions the size of a split pea interspersed in the large plaquelike areas. The bulbar portion of the nose revealed the atrophy and scarring which might come from lupus erythematosus.

DISCUSSION

DR. WILLIAM H. GOECKERMAN: I think that this is an unusually interesting case, particularly from the standpoint of speculation. There can be no doubt that

the patient is sensitive to light. According to the history, he has been sensitive to light since he was 21 years of age. Morphologically, the eruption is now an erythema multiforme. With this combination one wonders how to fit the whole combination into one dermatosis. I raise the question: Is the sensitiveness to light possibly caused by a lupus erythematosus of the so-called erythema multiforme type? I should not like to favor the idea. There is nothing now characteristic of lupus erythematosus, unless we assume that erythema multiforme may be a manifestation of the virus that usually produces lupus erythematosus, which I am not inclined to do, because histologically we can differentiate between them. Hydroa vacciniforme could readily produce this amount of scarring. That, again, would not fit in with the appearance of the lesions late in life. The combination offers an interesting case. It may be necessary to assume two distinct diagnoses. I suggest an examination for hematoporphyrinuria, to see whether he might have that type of photosensitization. The photosensitiveness and the scarring are too definite and pronounced to explain on the basis of a phenolphthalein eruption.

DR. KENDAL FROST: There is something about the acuity and severity of the eruption that makes me feel that there is a likelihood of its being a drug eruption. He is taking Currier's tablets, and I do not know whether they contain phenolphthalein.

DR. SAMUEL AYRES, JR.: I do not recall seeing a case of hydroa aestivale in the twelve years that I have been in Los Angeles. I used to see cases not infrequently in the East. I see a good many cases of sensitiveness to light, but I have not seen a case of hydroa aestivale.

A CASE FOR DIAGNOSIS. Presented by DR. KENDALL FROST and DR. SAUL S. ROBINSON.

A woman, aged 20, presents multiple lesions of the legs. A discoloration began around the ankles and spread gradually, until it now involves the whole surface of the legs up to the hips. Two and a half years ago she had an ulcer on the ankle and another one about a year later. She thinks that one is developing at the present time. The ulcers appeared spontaneously, without trauma. At present, she presents chiefly over the anterior surface of both legs up to the upper part of the thighs, fawn-colored, follicular lesions the size of a split pea, which are somewhat scaling. Over the right anterior malleolus is an inflammatory nodule, the size of a small pea. Biopsies have been made and will be reported on at the next meeting.

DR. MOSES SCHOLTZ: I have been watching this patient for many months. She presented a mixed picture of cutis marmorata and poor peripheral circulation, multiple papular and follicular inflammatory lesions and several papulonecrotic lesions, two of which, at the ankles, formed small sluggish ulcers. Under a general tonic regimen, ultraviolet irradiation and injections of gold preparations, the ulcers healed over. I consider them papulonecrotic tuberculids, but I am at a loss to classify or to account for the recurrent papular rash, unless it is a toxic eruption of undetermined etiology.

DR. CHARLES CASKEY: This condition is in the purpuric group, probably toxic. At one time the patient's pulse rate was 112 and the temperature, 99.8 F. The diet was evidently deficient at times, caused by attempts to reduce weight. She had some glandular dysfunctions, as evidenced by overweight and amenorrhea.

DR. IRVING R. BANCROFT: It seems to me that in this case there is an abnormal imbalance of the sympathetic nervous system, and that the lesions are caused by the action of this imbalance on the circulation.

DR. KENDAL FROST: At the clinic session of the International Conference at Copenhagen, a group of sarcoids was presented. There were many cases the pictures of which are totally unfamiliar to us in this country. The lesions in

this case show resemblance to a group of these cases of sarcoid, which presented tiny superficial papules. The results of biopsy will be given at the next meeting.

DR. WILLIAM H. GOECKERMAN: I think that the case is interesting. As it was discussed I wondered whether those who observed the case had seen any lesions typical of erythema induratum. I have had the opportunity to see a number of cases in which purpuric spots and brownish, minute papules, not typically papulonecrotic in character, were associated with pronounced scarring following typical infiltrations of erythema induratum. My opinion is that it represents essentially what I believe Dr. Scholtz had in mind.

DR. SAMUEL AYRES, JR.: Without pinning a name on the condition, it looks like a toxic telangiectasia. Certainly, when the erythema is pressed out around the nodules a definite telangiectasia remains, sometimes in almost a ring form, and there is a purpuric element also. The patient says that the outbreak around the knees appeared only the other day following a gastro-intestinal upset.

SUBSEQUENT NOTE.—Biopsy showed a rather marked cellular infiltrate in masses, both in the corium and in the subcutaneous tissue. This infiltrate was made up of connective tissue cells, epithelioid cells and occasionally a round cell. The diagnosis was believed to be sarcoid.

LUPUS ERYTHEMATOSUS (USHER-SENEAR TYPE) ASSOCIATED WITH UNUSUAL COMPLICATIONS. Presented by DR. HARRY P. JACOBSON.

A man, 41 years old, was seen four weeks ago for an eruption of the skin involving especially the face, but also other parts of the body and associated with various other complaints referable to the neuromuscular system.

The onset of the present illness had its inception about five months ago and followed the pricking of the middle finger of his right hand with a pin, while at work. About twenty-four hours after the injury, the finger swelled, became inflamed and necessitated his calling a physician, who incised the swollen part and instituted drainage. Soon thereafter (several days), the right hand began to feel numb and painful, and in a few days the numbness and pain extended to the other extremities of the body. In the meantime, an eruption of the skin developed which was at first confined to the face, but which gradually extended to and involved other parts of the body. Three months ago a number of teeth were extracted because of pyorrhea. A physician in one of the clinics in this city suspected leprosy and reported it to the city health department; examination of nasal smears for the bacillus of leprosy gave negative results.

About thirty years ago, the patient suffered from typhoid fever, and thirteen years ago, while with the British forces in Palestine, chills and fever developed and he was treated for malaria. About eleven years ago he was treated for pulmonary tuberculosis. For the past fifteen years he has been extremely constipated and has been having considerable "stomach trouble."

The patient has been married for ten years and has one child, 10 years old, who is perfectly well. The patient's father died at the age of 42 of pulmonary tuberculosis; one brother and three sisters died of pulmonary tuberculosis at the age of 17, 30, 24 and 27 years, respectively.

There is a symmetrical eruption involving the face and, to a lesser degree, the extremities and trunk. The eruption on the face is of the erythematous type, and is associated with a little scaling, but no atrophy. It is rather sharply marginated and somewhat infiltrated. The upper lip is markedly edematous (erysipelatous), and the mucous lining of the lip is obviously involved in the process. Scattered on the trunk are similar lesions of various sizes. On the anterior aspects of the lower extremities immediately below the knees and on the inner aspect of the right thigh are large, sharply marginated, circinate erythematous lesions in various stages of evolution, some acutely erythematous and others in the involuting, pigmentary stage. On the dorsa of both wrists are irregular tumor masses covered by what appears to be normal skin. These tumor masses

feel elastic and are neither tender nor painful. On the terminal phalanges of some of the fingers are crusted lesions of various sizes and shapes which the patient states represent the end-results of ruptured bullae and vesicles, appearing spontaneously and at varying intervals. There is a marked amount of lacrimation, but the conjunctivae do not appear to be unduly congested. The oral mucosa is normal except for a marked amount of gingival infection. The blood pressure was 112 systolic and 75 diastolic. Two blood counts, taken a week apart, were within normal limits.

DISCUSSION

DR. SAMUEL AYRES, JR.: This patient has definite anesthesia in the affected areas on the fingers. He has an ulnar nerve that is easily palpable. I think that the negative result of the nasal smear by no means rules out leprosy, and that a biopsy should be made. I do not think that the fact that this condition came on apparently following an infection of the finger means anything. In other words, the reason his finger became infected may be due to an injury of the nerve and anesthesia producing trophic disturbances in that finger, which allowed it to become infected. I think that it is a definite case of leprosy.

DR. NELSON P. ANDERSON: I also think that this is a case of Hansen's disease. Incidentally, this man has enlargement of the posterior auricular nerves, which is characteristic. Recently, in Dallas, it was brought out that in making nasal smears for leprosy one has to take a rough piece of gauze and traumatize the nose, not to the point of bleeding, but enough to make a traumatic abrasion there, in order to stir up the bacilli and isolate them. If one just takes an ordinary smear with an applicator, many times one fails in the search for the bacillus.

CLEVELAND DERMATOLOGICAL SOCIETY

J. R. DRIVER, M.D., *Reporter*

Regular Meeting, April 27, 1933

E. W. NETHERTON, M.D., *Presiding*

GRANULOMA INGUINALE; LATENT SYPHILIS; GONORRHEAL URETHRITIS. Presented by DR. H. F. DE WOLF.

A Negro, aged 21, from the service of Dr. Cole and Dr. Driver, had a lesion on the penis of three months' duration. A biopsy of the ulcer was very suggestive of granuloma inguinale, and Donovan's bodies had been isolated. There was unusually rapid healing of the lesion from intravenous injections of fuadin (antimony pyrocatechin sodium disulphonate, 6.3 per cent solution). The patient received 30 cc. in a period of two weeks.

TERTIARY SYPHILODERM; GLANDULAR TUBERCULOSIS. Presented by DR. H. F. DE WOLF.

A white woman, aged 29, from the service of Dr. Cole and Dr. Driver at the Cleveland City Hospital, complained of loss of weight, malaise and an extensive eruption on the body. Her mother and one brother had died of tuberculosis. Eleven years ago she had received rather extensive treatment for syphilis, and in 1927 she was treated at Mount Sinai Hospital for tuberculosis of the skin and lymph nodes. Examination revealed a generalized scaly and papular eruption, some lesions being circular in type and varying from 1.5 to 3 cm. in diameter. There were a few pustular lesions on the hands and feet. The eruption showed

many areas presenting papules and small indurated nodules. The dorsa of the hands presented some dull red, rather cyanotic plaques. On many areas, particularly over the anterior surface of the legs, were numerous small depressed scars. There was a scar on the left side of the neck where a gland had been removed in 1927. A roentgenogram of the chest showed healed lesions of tuberculosis with calcified lymph nodes. The Wassermann test and Kline precipitation test of the blood were reported negative in September, 1932. Repeated tests done since admission to our service have been strongly positive. Examination of the spinal fluid yielded negative results. An axillary lymph node removed in October, 1932, was diagnosed as presenting evidence of caseous tuberculosis. A biopsy of a cutaneous lesion removed recently established a diagnosis of chronic inflammation. Definite improvement was noted following the administration of two doses of aminohydroxyphenylarsenoxide.

DISCUSSION

DR. R. E. BARNEY: It is my opinion that the condition is tuberculosis cutis.

DR. H. J. PARKHURST: I consider the possibility of secondary syphilis due to reinfection because the patient received extensive antisyphilitic treatment eleven years ago, and the examinations of the blood until recently have given negative results.

DR. H. N. COLE: I believe that the previous speakers are at somewhat of a disadvantage in their opinion regarding reinfection in this case. When we first saw this patient, the eruption was of a nodular serpiginous type such as one sees in a comparatively late stage of syphilis; I think that it is a rather unusual occurrence. However, the disease involuted so rapidly under antisyphilitic therapy that I believe that it is simply a late recurrence in syphilis of eleven years' duration.

INTOXICATION FROM THALLIUM ACETATE (ENCEPHALITIS) WITH RECOVERY. Presented by DR. H. F. DE WOLF.

A Negro boy, aged 5, in good health generally, was treated for extensive tinea capitis. He received thallium acetate by mouth. On the seventh day he appeared listless, refused food and complained of epigastric pain. The symptoms became progressively worse. He vomited all food, became stuporous, had frequent epistaxis, was very irritable and had marked photophobia. Fibrillary twitchings of the face and a scanning type of speech developed. Following two weeks of treatment with frequent infusions of saline preparations the patient began to take and retain small amounts of fluids, and improvement gradually took place so that he has now practically recovered.

DISCUSSION

DR. W. H. CONNOR: This patient was one of several who received carefully calculated doses of thallium acetate on the same day. Calculations are made by two different persons, and the drug is weighed and rechecked by the second person. A brother of this patient was treated on the same day and had no toxic effect.

DR. H. N. COLE: This is the first case of serious intoxication from thallium acetate that we have had in the treatment of several hundred patients. While great care is used in estimating the dose and weight, still there is a possibility of error, and I am of the opinion that a mistake may have been made in the dosage given this patient. We are extremely fortunate that recovery without any apparent serious after-effects has taken place here.

MULTIPLE SARCOIDS OF BOECK. Presented by DR. C. L. CUMMER and DR. C. G. LAROCCO.

A Negro, aged 23, has had no serious illness except pneumonia in childhood and again in 1925. About one year previous to presentation he noticed some small growths on the forehead, nose, eyelids and cheeks which have gradually

increased in size. In the past few months lesions of similar character have also appeared on the trunk.

Examination revealed intracutaneous lesions varying in size from 1 mm. to 1 cm. or larger. The lesions were raised and indurated, extending deeply into the skin. Numerous nodules were found over the trunk, arms and legs.

A biopsy revealed a thin layer of stratified squamous epithelium, beneath which was a roughly circumscribed and lobulated mass. The new growth was made by interlacing bundles of fat spindle cells, which lay closely massed and were well circumscribed individually. No mitotic figures were seen, and there was no evidence of suppurative change. Each small bundle of proliferating tumor had a number of thin-walled blood vessels which were moderately prominent. The spindle cells were arranging themselves in a whorl formation, but showed no tendency to invasion of the surrounding corium. The tumor appeared to have been incompletely removed. A pathologic diagnosis of benign fibroma (sarcoid of Boeck) was made.

The roentgenologic report was as follows: A single film of the chest showed an enlargement of the hilar lymph glands on each side which might be of tuberculous origin; however, no area reaching to the periphery was seen. There was thickening of the interlobular pleura between the right middle and lower lobes. The apexes and costophrenic angles were clear.

DISCUSSION

DR. H. F. DE WOLF: The condition of the patient resembles almost identically the case of S. W., presented before this Society on numerous occasions (A Case for Diagnosis, ARCH. DERMAT. & SYPH. **21**:500 [March] 1930; Multiple Benign Sarcoid, ibid. **26**:586 [Sept.] 1932; Multiple Sarcoid-Like Lesions of the Skin, ibid. **27**:343 [Feb.] 1933). Dr. Weidman of Philadelphia believed it to be avian tuberculosis, but inoculations of fowls did not substantiate this diagnosis.

DR. H. N. COLE: The patient presented by Dr. Cummer and Dr. La Rocco does not show as many lesions as the patient to which Dr. De Wolf refers. I think that it would be well to have this patient hospitalized and studies, particularly inoculations into animals, carried out. Foci of infection should be sought, and in my opinion the case should be classed as one of true sarcoid of Boeck.

Book Reviews

Inherited Abnormalities of the Skin and Its Appendages. By E. A. Cockayne, M.D., Physician to the Middlesex Hospital. Cloth. Price, $8. Pp. 394, with illustrations. New York: Oxford University Press, 1933.

Dr. Cockayne has in this book collected the available pedigrees of families presenting abnormalities of the skin, teeth, nails, hair, branchial clefts and breasts. The work has been done with great thoroughness, and the data have been analyzed from a conservative genetic point of view. The author has attempted in the case of each abnormality to determine the mendelian mechanism that best explains the family studies in the literature. When there is insufficient data for a definite conclusion, he indicates the direction that future studies must take. The result is a unique volume of enormous practical and theoretical value to both dermatology and genetics. The reader can find in a few pages a summary and analysis of all the literature concerning a given condition of the skin. The bibliography is exhaustive.

The growing recognition of the importance of constitution in the study of disease makes the appearance of this book more pertinent. Heredity is the basis of constitution. The knowledge of the hereditary background of a disease helps one to orient oneself in understanding its pathogenesis. It affords the greatest weapon for prevention, that is, eugenic control, though its application at the present moment may not appear practicable. It allows also the practice of preventive measures in a person whose family history indicates the presence of a susceptibility to disease. With this outlook, studies in the heredity of disease do not become the source of hopeless prognoses but an added means of prevention.

Genetic studies point out that with all biologic characteristics, two factors working together must be considered, heredity and environment, or, as they are so often termed, nature and nurture. In some cases, as with albinism, there are no known environmental factors that will affect the chomosomal or hereditary factors that determine the development of this anomaly. In other cases, such as premature baldness, which shows a definite familial incidence, environmental factors may alter the predetermined tendency, as the numerous therapeutic efforts indicate. The problem of medicine is to control the heredity, and if this cannot be done, to increase knowledge of effective environmental factors. In either case, an accurate knowledge of the hereditary basis of the disease is essential.

This book has an excellent introductory section discussing the significance and terminology of mendelism, which must form the basis of any studies in heredity. The author indicates how a family history should be taken to be of value, a simple procedure that is universally neglected except in special studies.

Dr. Cockayne apparently plans similar volumes in other fields of medicine. He has favored dermatology in choosing as his first effort the collection in one volume of the genetics of abnormalities of the skin.

Directory of Dermatologic Societies *

FOREIGN

British Association of Dermatology and Syphilology (Canadian Branch)

Alberic Marin, President, Drummond Medical Bldg., Montreal.
Antonio Sabetta, Secretary-Treasurer, 3435 St. Denis St., Montreal.
Place: Hamilton, Ontario. Time: 1934.

Royal Society of Medicine, Section of Dermatology

A. M. H. Gray, President, 30 New Cavendish St., W. 1, London.
W. N. Goldsmith, Secretary, 6, Upper Wimpole St., W. 1, London.

NATIONAL DERMATOLOGIC SOCIETIES

American Medical Association, Scientific Assembly, Section on Dermatology and Syphilology

C. Guy Lane, Chairman, 416 Marlboro St., Boston.
Harry R. Foerster, Secretary, 208 E. Wisconsin Ave., Milwaukee.
Place: Cleveland. Time: June 11-15, 1934.

American Dermatological Association

Harold N. Cole, President, 1422 Euclid Ave., Cleveland.
W. H. Guy, Secretary, 500 Penn Ave., Pittsburgh.
Place: New York. Time: June 7-9, 1934.

SECTIONAL DERMATOLOGIC SOCIETIES

Baltimore-Washington Dermatological Society

Harry M. Robinson, President, 106 E. Chase St., Baltimore.
M. H. Goodman, Secretary, 401 Medical Arts Bldg., Baltimore.

Central States Dermatological Association

Emmett C. Troxell, President, 74 W. Adams St., Detroit.
William G. Saunders, Secretary, 9203 Grand River Ave., Detroit.
Place: Pittsburgh. Time: 1933.

Iowa and Western Illinois Dermatological Association

J. C. Kessler, President, University Hospital, Iowa City.
Robert E. Jameson, Secretary, 1014 First National Bank Bldg., Davenport, Iowa.

New England Dermatological Society

Rudolph Jacoby, President, 270 Commonwealth Ave., Boston.
J. Harper Blaisdell, Secretary, 5 Bay State Road, Boston.
Place: Boston. Time: April 11, 1934.

Southern Medical Association, Section on Dermatology and Syphilology

Thomas W. Murrell, Chairman, 17 E. Grace St., Richmond, Va.
C. C. Dennie, Secretary, Professional Bldg., Kansas City, Mo.
Place: San Antonio, Texas. Time: November, 1934.

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* Secretaries of dermatologic societies are requested to furnish the information necessary for the editor to make this list complete and to keep it up to date.

STATE DERMATOLOGIC SOCIETIES

Florida Society of Dermatology and Syphilology

Chairman for each meeting is elected from city in which meeting is held.
Elmo D. French, Secretary, 602 Huntington Bldg., Miami.
Place: Jacksonville. Time: July 2, 1934.

Louisiana Dermatological Society

J. A. Devron, President, 150 Baronne St., New Orleans.
M. T. Van Studdiford, Secretary-Treasurer, 912 Pere Marquette Bldg., New Orleans.

Medical Society of the State of New York, Section on Dermatology and Syphilology

George M. Fisher, Chairman, 264 Genesee St., Utica.
Frank Combes, Secretary, 80 W. 40th St., New York.

Medical Society of the State of Pennsylvania, Section on Dermatology

Herbert J. Smith, President, 3303 N. 17th St., Philadelphia.
Robert L. Gilman, Secretary, 1930 Chestnut St., Philadelphia.

Michigan State Medical Society, Section on Dermatology and Syphilology

Robert C. Jamieson, Chairman, 1551 Woodward Ave., Detroit.
A. R. Woodburne, Secretary, Grand Rapids Clinic, Grand Rapids.
Place: Battle Creek. Time: September, 1934.

Minnesota Dermatological Society

D. D. Turnacliff, President, 407 Medical Arts Bldg., Minneapolis.
L. H. Winer, Secretary, 522 Medical Arts Bldg., Minneapolis.
Time: First Wednesday in October, December, February and April.

Oklahoma Dermatological Association

W. A. Showman, President, 108 W. 6th St., Tulsa.
C. L. Brundage, Secretary, 505 Osler Bldg., Oklahoma City.

Texas Dermatological Society

Everett C. Fox, President, 1719 Pacific Ave., Dallas.
Everett R. Seale, Secretary, 1215 Walker Ave., Houston.

LOCAL DERMATOLOGIC SOCIETIES

Atlanta Dermatological Society

Francis G. Jones, President, 384 Peachtree St., Atlanta, Ga.
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